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ABSTRACT

A two-part report presents the results of the 16th national survey of American high school seniors, and the 11th national survey of American college students. This volume contains the results from high school seniors. Chapter 1 explains the purposes and rationale for the research, and content areas covered in the report. Chapter 2 presents an overview of the key findings. In chapter 3 the research design, sampling plans, and field procedures used in both the in-school surveys of seniors, and the follow-up surveys of young adults are presented. Chapter 4 summarizes the levels of drug use reported by the high school class of 1990, and chapter 5 summarizes trends in drug use, comparing the 16 graduating classes of 1975 through 1990. Chapter 6 discusses the issue of drug use at earlier grade levels. Chapter 7 presents results from questions examining the degree and duration of highs among seniors. Chapter 8 presents the cross-time results for three sets of attitude and belief questions. Data pertaining to the social milieu of young people are presented in Chapter 9, including parental and peer attitudes and exposure to drug use by friends and others. Additional recent findings from the Monitoring the Future study are presented in chapter 10. The findings focus on the use of nonprescription stimulants; the use of marijuana on a daily basis; racial/ethnic differences in drug use; explaining declines in marijuana and cocaine use; and changes in drug use during pregnancy. Extensive tables and figures are included. (LLL)

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National Institute on Drug Abuse

# DRUG USE AMONG AMERICAN HIGH SCHOOL SENIORS, COLLEGE STUDENTS AND YOUNG ADULTS, 1975-1990

## Volume I

## High School Seniors

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U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES
Public Health Service
Alcohol, Drug Abuse, and Mental Health Administration

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# DRUG USE AMONG AMERICAN HIGH SCHOOL SENIORS, COLLEGE STUDENTS AND YOUNG ADULTS, 1975-1990

## Volume I

## High School Seniors

by

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## Chapter 1

# INTRODUCTION

This two-part report presents the results of the sixteenth national survey of American high school seniors and the eleventh national survey of American college students. It is the fourteenth such report on the drug use and related attitudes of America's high school seniors, college students, and young adults. This year for the first time it has been divided into two volumes, with results from high school seniors reported in Volume I, and results from college students and young adults reported in Volume II. The data derive from an ongoing national research and reporting program, entitled Monitoring the Future: A Continuing Study of the Lifestyles and Values of Youth, which is conducted by the University of Michigan's Institute for Social Research and is funded by the National Institute on Drug Abuse. The study is sometimes referred to as the High School Senior Survey, since each year a representative sample of all seniors in public and private high schools in the coterminous United States is surveyed. However, it also includes representative samples of young adults from previous graduating classes who are administered follow-up surveys by mail. A representative sample of American college students one to four years past high school has been encompassed by these follow-up samples each year since 1980. Next year the study will encompass a still broader age band as eighth and tenth grade students are added.

## SURVEYS OF HIGH SCHOOL SENIORS

Two of the major topics which continue to be included in this present series of annual reports are the current prevalence of drug use among American high school seniors, and trends in use by seniors since the study began in 1975. Distinctions among important demographic subgroups in the population are made. Also reported are data on grade of first use, trends in use at lower grade levels, intensity of drug use, attitudes and beliefs among seniors concerning various types of drug use, and their perceptions of certain relevant aspects of the social environment.

## SURVEYS OF COLLEGE STUDENTS AND YOUNG ADULTS GENERALLY

Data on the prevalence and trends in drug use among young adults who have completed high school are also incorporated into this report series; this year, these data are reported primarily in Volume II. Some results are alluded to in Volume I, particularly in Chapter 2, Overview of Key Findings. The period of young adulthood (late teens to the late twenties) is particularly important because this tends to be the period of peak levels of use for many drugs. The continuing epidemic of cocaine use among young adults also makes this an age group of particular policy importance.

The Monitoring the Future study design calls for continuing follow-up panel studies of a subsample of the participants in each participating senior class, beginning with the class of 1976. Thus, data were gathered in 1990 on representative samples of the graduating classes of 1976 through 1989, corresponding to modal ages of 19 to 32. Results from this population are presented in a number of chapters in Volume II.

Two chapters in Volume II present data on college students specifically. This segment of the young adult population has not been well represented in other national surveys, because many college students live on campus, in dormitories, fraternities, and sororities, and these group dwellings are not included in the national household survey population. Trends are presented on drug use among college students since 1980—the first year in which a good national sample of college students one to four years past high school was available from the follow-up survey. Thus the 1990 study constitutes the eleventh national survey of American college students in this series.

## CONTENT AREAS COVERED IN THIS REPORT

Initially, eleven separate classes of drugs were distinguished for this series of reports: marijuana (including hashish), inhalants, hallucinogens, cocaine, heroin, opiates other than heroin (both natural and synthetic), stimulants (more specifically, amphetamines), sedatives, tranquilizers, alcohol, and tobacco. This particular organization of drug use classes was chosen to heighten comparability with a parallel series of publications based on the National Institute on Drug Abuse's national household surveys on drug abuse. Separate statistics are also presented here for several sub-classes of drugs within these more general classes: PCP and LSD (both hallucinogens), barbiturates and methaqualone (both sedatives), the amyl and butyl nitrites (both inhalants), and crack and other cocaine. PCP and the nitrites were added to the study for the first time in 1979 because of increasing concern over their rising popularity and possibly deleterious effects; trend data are thus only available for them since 1979. For similar reasons, "crack" cocaine was added to the 1986 survey and the questions on crack were expanded in 1987. MDMA or "ecstasy" was added in 1989 (to follow-up surveys only) and crystal methamphetamine ("ice") was added in 1990. Barbiturates and methaqualone, which constitute the two components of the "sedatives" class as used here, have been separately measured from the outset. They have been presented separately because their trend lines are substantially different. A somewhat different class of drugs—anabolic steroids—was added in 1989 because of its dangers and its increasing illicit use among young people.

For drugs other than alcohol, cigarettes, and nonprescription stimulants, practically all of the information reported here deals with illicit use. Respondents are asked to exclude any occasions on which they used any of the psychotherapeutic drugs under medical supervision. (Some data on the medically supervised use of such drugs are contained in the full 1977, 1978, 1981, and 1983 volumes, and one article gives trends in the medical use of these drugs.[1])

Throughout this report we have chosen to focus considerable attention on drug use at the higher frequency levels rather than simply reporting proportions who have ever used various drugs. This is done to help differentiate levels of seriousness, or extent, of drug involvement. While there still is no public consensus on what levels or patterns of use constitute "abuse," there is surely a consensus that higher levels of use are more likely to have detrimental effects for the user and society than are lower levels. We have also introduced indirect measures of dosage per occasion, by asking respondents the duration and intensity of the highs they usually experience with each type of drug. Chapter 7 of this report deals with those results.

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[1] Johnston, L. D., O'Malley, P. M., & Bachman, J. G. (1987). Psychotherapeutic, licit, and illicit use of drugs among adolescents: An epidemiological perspective. *Journal of Adolescent Health Care, 8*, 36–51.

For both licit and illicit drugs, separate chapters of this report are devoted to age of first use; the seniors' own attitudes and beliefs; the attitudes, beliefs, and behaviors of others in the seniors' social environment; and perceived drug availability. Some of these variables have proven to be important explanators of the secular trends in use which have been observed.

Chapter 10, Other Findings from the Study, deals with the use of nonprescription stimulants, including diet pills, stay-awake pills, and the "look-alike" pseudoamphetamines. Questions on these substances were placed in the survey beginning in 1982 because the use of such substances appeared to be on the rise, and also because their inappropriate inclusion by some respondents in their answers about amphetamine use were affecting the observed trends. The Other Findings from the Study chapter continues to present trend results on those nonprescription substances.

Trend results from a set of questions on the use of marijuana at a daily or near-daily level are also presented in that chapter. These questions were added to enable us to develop a more complete individual history of daily use over a period of years, and they reveal some very interesting facts about the frequent users of this drug. The results from several recent articles and chapters from the study are also summarized in this section dealing with racial/ethnic differences in prevalence and trends in use, the impact of perceived risk on marijuana and cocaine use, the impact of pregnancy on use by young adult women, and a general theory of the dynamics of drug epidemics.

Two chapters in Volume II (Attitudes and Beliefs About Drugs Among Young Adults, and The Social Milieu for Young Adults) parallel in their content the topics covered for high school seniors in Volume I; namely, the perceived risks of various drugs, personal disapproval of various forms of drug use, exposure to the use of various drugs through friends and others, the perceived norms in their own friendship circles, and the perceived availability of various drugs.

## PURPOSES AND RATIONALE FOR THIS RESEARCH

Perhaps no area has proven more clearly appropriate for the application of systematic research and reporting than the drug field, given its rapid rate of change, its importance for the well-being of the nation, and the amount of legislative and administrative intervention which continues to be addressed to it. Young people are often at the leading edge of social change; and this has been particularly true in the case of drug use. The massive upsurge in illicit drug use during the last twenty-five years has proven to be primarily a youth phenomenon, with onset of use most likely to occur during adolescence. Young adults in their twenties are also among the age groups at highest risk for illicit drug use: indeed, the widespread epidemic of the last twenty years really began on the nation's college campuses. From one year to the next particular drugs rise or fall in popularity, and related problems occur for youth, for their families, for governmental agencies, and for society as a whole. This year's findings continue to show that change is still taking place.

One of the major purposes of the Monitoring the Future series is to develop an accurate picture of the current drug use situation and trends—and this in itself is a formidable task, given the illicit and illegal nature of most of the phenomena under study. Having a reasonably accurate picture of the basic size and contours of the problem of illicit drug use among young Americans is a prerequisite for rational public debate and policy making. In the absence of reliable *prevalence* data, substantial misconceptions can develop and resources can be misallocated. In the absence of reliable data on *trends*, early detection and localization of emerging problems are more difficult, and assessments of the impact of major historical and policy-induced events are much more conjectural.

The study also monitors a number of factors which may help to *explain* the observed changes in drug use. Some of them are presented in this series of volumes, including peer norms regarding drugs, beliefs about the dangers of drugs, perceived availability, and so on. In fact, the monitoring of these factors has made it possible to examine a central policy issue for the country in its war on drugs—namely the relative importance of supply reduction effects vs. demand reduction effects in bringing about some of the observed declines in use.

The Monitoring the Future study also has many important research objectives in addition to assessing accurately prevalence and trends, and trying to determine the causes of some of these trends—objectives which are not addressed in any detail in this series of volumes. Among these other objectives are: helping to determine what types of young people are at greatest risk for developing various patterns of drug abuse; gaining a better understanding of the lifestyles and value orientations associated with various patterns of drug use, and monitoring how those orientations are shifting over time; determining the immediate and more general aspects of the social environment which are associated with drug use and abuse; determining how drug use is affected by major transitions in social environment (such as entry into military service, civilian employment, college, unemployment) or in social roles (marriage, parenthood); determining the life course of the various drug using behaviors during this period of development; distinguishing such "age effects" from cohort and period effects in determining drug use; determining the effects of social legislation on various types of substance use; and determining the changing connotations of drug use and changing patterns of multiple drug use among youth. We believe that the differentiation of period, age, and cohort effects in substance use of various types has been a particularly important contribution of the project, and one which its cohort-sequential research design is especially well-suited to make. Readers interested in publications dealing with any of these other areas should write the authors at the Institute for Social Research, The University of Michigan, Ann Arbor, Michigan, 48106-1248.

## Chapter 2

# OVERVIEW OF KEY FINDINGS

This monograph reports findings from the ongoing research and reporting project entitled Monitoring the Future: A Continuing Study of the Lifestyles and Values of Youth. Each year since 1975, in-school surveys of nationally representative samples of high school seniors have been conducted. (Beginning in 1991 data on 8th and 10th graders also will be gathered.) In addition, in each year since 1976, representative subsamples of the participants from each previous graduating class have been surveyed by mail.

Findings on the prevalence and trends in drug use and related factors are reported in this volume for high school seniors and also for young adult high school graduates 19-30 years old. Trend data are presented for varying time intervals, covering up to fifteen years in the case of the high school senior population. For college students, a particularly important subset of this young adult population on which there currently exist no other nationally representative data, we present detailed prevalence and trend results (since 1980) in Volume II of this report. (The high school dropout segment of the population—about 15%—20% of an age group—is of necessity omitted from the coverage of all three populations, though this omission would have little effect on the coverage of college students. An appendix to this report discusses the likely impact of omitting dropouts from the sample coverage.)

A number of important findings emerge from these three national populations—high school seniors, college students, and all young adults through age 32 who are high school graduates. They have been summarized and integrated here so that the reader may quickly get an overview of the key results. However the detailed findings on college students and all young adults are presented separately in Volume II of this report, which is published a few months subsequent to Volume I.

## TRENDS IN ILLICIT DRUG USE

- In 1990 we saw a continuation of the longer-term gradual decline in the proportion of all three populations involved in the use of ***any illicit drug***, with the proportion reporting use in the past year among high school seniors dropping from the 1989 level by 3% (to 33% in 1990); among college students also dropping by 3% (to 33% in 1990) and among all young adults 19 to 28 by 2% (to 31% in 1990).

  The proportion of these populations using ***any illicit drug other than marijuana*** in the prior year also fell, by 2% among seniors (to 18% in 1990), by 1% among college students (to 15%), and by

2% among all young adults (to 17%). Clearly, despite the improvements, large proportions of our young people are fairly recent users of drugs which are for the most part both illegal and dangerous.

- The use of ***crack*** cocaine appeared to level in 1987 at relatively low prevalence rates, at least within these populations. (This occurred despite the fact that the crack phenomenon continued a process of diffusion to new communities that year.) In 1990, lifetime prevalence for seniors continued to decline (to 3.5%, down from 5.4% in 1987), and annual prevalence declined to 1.9% (down from 3.9% in 1987). Among young adults one to ten years past high school, lifetime prevalence is slightly higher (5.1%, down from 6.9% in 1988) and annual prevalence is slightly lower (1.6%, down from 3.1% in 1988) than among seniors.

  In 1990, college students one to four years past high school showed an annual prevalence of 0.6% (down from 2.0% in 1987 and down significantly in 1990). Their annual prevalence is now a fraction of that observed among their age-mates not in college (1.8%). (In high school annual crack prevalence among the college-bound is also lower than among those not bound for college [1.2% vs. 3.5%].)

  In terms of regional differences in crack use, annual prevalence among seniors remains highest in the West (2.7%), followed by the Northeast (2.0%), the South (1.8%), and the North Central (1.6%). All regions exhibited a decline. Use is now lowest in the large cities (1.6%), with both the nonmetropolitan areas and the smaller cities at 2.0%.

  We believe that the particularly intense media coverage of the hazards of crack cocaine, which took place quite early in what could have been a considerably more serious epidemic, likely had the effect of "capping" that epidemic early by deterring many would-be users and by motivating many experimenters to desist use. While 3.5% of seniors report ever having tried crack, only 0.7% report use in the past month, indicating noncontinuation by 80% of those who try it. The overall downward trend can be explained both in terms of lower initiation rates among students and higher noncontinuation rates.

- ***Cocaine*** in general began to decline a year earlier than crack, the annual prevalence rate between 1986 and 1987 dropping by roughly four-tenths in all three populations studied.[2] As we had predicted earlier, the decline occurred when young people began to see experimental and occasional use as more dangerous; and this happened by 1987, probably partly because the hazards of cocaine use received extensive media coverage in the preceding year, but almost surely in part because of the cocaine-related deaths in 1986 of sports stars Len Bias and Don Rogers.

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[2] Unless otherwise specified, all references to "cocaine" refer to the use of cocaine in any form, including crack.

In 1990 this broad decline continued, with annual prevalence falling from 6.5% to 5.3% among seniors, from 10.8% to 8.6% among young adults one to ten years past high school, and from 8.2% to 5.6% among college students. In sum, annual prevalence of cocaine use has how fallen by a half to two-thirds among all three populations.

The perceived risk of using cocaine generally and crack in particular, has continued to climb among both seniors and young adults as has peer disapproval of use. Through 1989 there was no decline in perceived availability: in fact, it continued to rise steadily after 1984, which suggests that decreased availability played no role in bringing about the substantial downturn in use. In 1990, however, perceived availability dropped by about 4% for the first time among both seniors and young adults.

As with all the illicit drugs, lifetime cocaine prevalence climbs with age, actually exceeding 40% by age 27. Unlike all of the other illicit drugs, active use—i.e., annual prevalence or monthly prevalence—also climbs substantially after high school.

- The declines in crack and cocaine use in 1990 were accompanied by a further decline for a number of other drugs as well. The annual prevalence of ***marijuana*** use among seniors continued its long decline, and fell significantly to the lowest level since the study began (27%, down 2.6% from 1989 and down from a peak level of 51% in 1979.) A similar decrease occurred among college students (29%, down 4.2% and down from a peak level of 51% in 1980) and among all young adults one to ten years past high school (down 2.9% to 26%; data before 1986 not available). ***Daily marijuana use*** among seniors also fell significantly (down 0.7% to 2.2%), young adults (down 0.7% to 2.5%), and college students (down 0.9% to 1.7%). For seniors this represents a three-quarters overall drop in daily use from the peak level of 10.7%, observed in 1978. College students have dropped by three-fourths from our first reading of 7.2% in 1980.

- Another widely used class of illicit drugs showing an important shift in 1990 is ***stimulants***. Declines in use continued among all three populations in 1990 as part of a longer-term trend that began in 1982. Since 1982, annual prevalence has fallen from 20% to 9% among seniors and from 21% to 5% among college students. Annual prevalence is also 5% among young adults, but long-term trends are not yet available for 19–28 year olds.

- Concurrent with this drop in illicit amphetamine use is an increase in the use of over-the-counter ***stay-awake pills***, which usually contain caffeine as their active ingredient. Their annual prevalence among seniors doubled in seven years, from 12% in 1982 to 23% in 1990. Increases have also occurred among the young adult population (where annual prevalence is up by about one-third, to 21%, among the 19 to 22 year olds.)

  The other two classes of nonprescription stimulants—the ***"look-alikes"*** and the over-the-counter ***diet pills***—have actually shown some fall-off among both seniors and young adults in recent years. Still, among seniors some 28% of the females have tried diet pills by the end of senior year, 17% have used them in the past year, and 7% in just the past month.

- ***LSD*** use has been fairly constant in recent years in all three populations, following a period of some decline. However, all three did show some increase in 1990. Annual prevalence in 1990 is 5.4% among seniors, 4.3% among college students, and 3.3% among young adults.

- ***PCP*** use fell sharply, from an annual prevalence of 7.0% in 1979 to 2.2% in 1982 among high school seniors. It reached a low point of 1.2% in 1988, increased a bit to 2.4% in 1989, and then fell again to its low point of 1.2% in 1990. It is now only 0.2% for the young adults.

- The annual prevalence of ***heroin*** use has been very steady since 1979 among seniors at 0.5% to 0.6%. (It had earlier fallen from 1.0% in 1975.) The heroin statistics for young adults and college students have also remained quite stable in recent years at low rates (about 0.1% to 0.2%).

- The use of ***opiates other than heroin*** has been fairly level over most of the life of the study. Seniors have had an annual prevalence rate of 4% to 6% since 1975. Young adults in their twenties have generally shown a similar cross-time pattern. But even for this class of drugs there was a significant, though modest, decline in 1988 from 5.3% to 4.6% in annual prevalence among seniors; the 1990 figure is 4.5%.

- A long and substantial decline, which began in 1977, has occurred for ***tranquilizer*** use among high school seniors. Annual prevalence now stands at 3.5% compared to 11% in 1977. Annual prevalence has now declined to 3.7% for the young adult sample, and to 3.0% for the college student sample.

- The long-term gradual decline in ***barbiturate*** use, which began at least as early as 1975, when the study began, halted in 1989; the annual prevalence among seniors fell to 3.3%, compared to 10.7%

in 1975. It remains at 3.4% in 1990. Annual prevalence of this class of sedative drugs is even lower among the young adult sample (1.9%), and lower still among college students specifically (1.4%).

- ***Methaqualone***, another sedative drug, has shown quite a different trend pattern. Its use rose steadily among seniors from 1975 to 1981, when annual prevalence reached 8%. It then fell rather sharply to 0.7% by 1990. Use also fell among all young adults and among college students, which had annual prevalence rates of only 0.3% and 0.2%, respectively in 1989—the last year in which they were asked about this drug. In recent years, shrinking availability may well have played a role in this drop, as legal manufacture and distribution of the drug ceased.

- In sum, the three classes of illicitly used drugs which have had an impact on appreciable proportions of young Americans in their late teens and twenties are ***marijuana***, ***cocaine***, and ***stimulants***. Among high school seniors they show annual prevalence rates in 1990 of 27%, 5%, and 9%, respectively. Among college students the comparable annual prevalence rates in 1990 are 29%, 6%, and 5%; and for all high school graduates one to ten years past high school (the "young adult" sample) they are 26%, 9%, and 5%.

### *Age-Related Differences*

- A number of additional interesting findings emerge from the chapters in this report dealing with age-related changes in use. One is that, with the important exceptions of cigarettes and alcohol use, rather little ***illicit drug*** use is initiated by sixth grade, according to seniors. However, use of either alcohol or cigarettes is illicit for children this age; still, some 19% already had initiated ***cigarette*** use and 11% ***alcohol*** use by sixth grade. Of the illicit drugs, ***marijuana*** and ***inhalants*** show the earliest pattern of initiation; about 2.8% of the 1990 seniors had initiated use of each of these drugs by sixth grade. But the peak initiation rate is soon reached—by 9th grade—in the case of both of these drugs. Among seniors, peak initiation rates for ***cocaine*** and ***hallucinogens*** are reached in tenth and eleventh grade, with the initiation rate for nearly all drugs falling off by twelfth grade.

  It is interesting to note that the already high proportion of young people who by senior year have at least tried ***any illicit drug*** grows substantially larger up through the mid-twenties. For example, in the classes of 1976 through 1979, from 58–65% had used ***any illicit drug*** by their senior year. In 1990, when they were in their late twenties and early 30's, roughly 80% of them had done so. There was a similar rise in the proportion of them who had used ***any illicit other than marijuana***—from roughly 36% when they were seniors to about 60% by 1990, when they were in their late twenties and early 30's. For ***cocaine*** the increase was from 10–15% in senior year to roughly 40% by 1990.

Largely as a result of this, when we do a comparison across all age groups surveyed in 1990, we find that lifetime prevalence for most drugs is much higher in the older age groups than the younger ones. On the other hand, *active* illicit drug use among the older age groups has tended to approximate the levels observed among seniors. This has been true for the annual prevalence of ***any illicit drug***, ***marijuana***, and ***tranquilizers***. It also has been true for ***daily marijuana use***. In fact, the young adult sample actually has lower rates of annual prevalence than high school seniors on seven drugs—the ***inhalants***, ***LSD***, ***methaqualone***, ***barbiturates***, ***stimulants***, ***heroin***, and ***opiates other than heroin***. ***Cocaine***, of course, is the exception in that active use rises until about age 25, where it reaches a plateau and thereafter may decline.

### *College-Noncollege Differences*

- ***American college students*** (defined here as those respondents one to four years past high school who were actively enrolled full-time in a two- or four-year college) show annual usage rates for a number of drugs which are about average for their age, including ***any illicit drug***, ***marijuana*** specifically (although their rate of ***daily marijuana use*** is about half what it is for the rest of their age group, i.e., 1.7% vs. 3.0%), ***inhalants***, ***hallucinogens***, ***heroin***, and ***opiates other than heroin***. For several categories of drugs, however, college students have rates of use which are below those of their age peers, including ***any illicit drug other than marijuana***, ***cocaine***, ***crack*** cocaine specifically, ***LSD***, ***stimulants***, and ***barbiturates***. They actually have a slightly higher rate of use for ***MDMA*** or "ecstasy."

  Since college-bound seniors had below average rates of use on all of these illicit drugs while they were in high school, their eventually attaining parity on some of them reflects some closing of the gap. As results from the study published elsewhere have shown, the "catching up" may be explainable more in terms of differential rates of leaving the parental home and of getting married than in terms of any direct effects of college *per se*. (College students are more likely to have left the parental home and less likely to have gotten married than their age peers.)

- In general, the trends since 1980 in illicit substance use among American college students have been found to parallel those of their age peers not in college. That means that for most drugs there has been a decline in use over the interval. Further, all young adult high school graduates through age 28, as well as college students taken separately, show trends which are highly parallel for the most part to the trends among high school seniors, although declines in the active use of many of the drugs over the past half decade have been proportionately larger in these two older populations than among high school seniors.

### *Male-Female Differences*

- Regarding sex differences in the three populations, males are more likely to use ***most illicit drugs***, and the differences tend to be largest at the higher frequency levels. ***Daily marijuana use*** among high school seniors in 1990, for example, is reported by 3.2% of males vs. 1.0% of females; among all young adults by 3.7% of males vs. 1.6% of females; and among college students, specifically, by 2.7% of males vs. 0.9% of females. The only exceptions to the rule that males are more frequently users of illicit drugs than females occur for ***stimulant, sedative*** and ***tranquilizer*** use in high school, where females are at the same level or slightly higher. The sexes also attain near parity on stimulant and tranquilizer use among the college and young adult populations.

- Insofar as there have been differential trends for the two sexes among any of these populations, they have been in the direction of a diminution of differences between the sexes. For college students, previous differences in the usage rates for ***methaqualone***, ***LSD*** and ***daily marijuana*** have declined as the prevalence rates for both sexes converge toward zero (which means that use by males has fallen more). The same is happening for daily marijuana use among young adults generally, as well as high school seniors. There is also some convergence between the sexes in ***stimulant*** use among all three sub-populations. The convergence is again due to a greater drop in use among males.

## TRENDS IN ALCOHOL USE

- Regarding ***alcohol*** use in these age groups, several findings are noteworthy. First, despite the fact that it is illegal for virtually all high school students and most college students to purchase alcoholic beverages, experience with alcohol is almost universal among them (90% of seniors have tried it) and active use is widespread. Most important, perhaps, is the widespread occurrence of ***occasions of heavy drinking***—here measured by the percent reporting five or more drinks in a row at least once in the prior two-week period. Among seniors this statistic stands at 32% and among college students it stands at 41%.

- Regarding trends in alcohol use, during the period of recent decline in the use of marijuana and other illicit drugs there appears not to have been any "displacement effect" in terms of any increase in alcohol use among seniors. (It was not uncommon to hear such a displacement hypothesis asserted.) If anything, the opposite seems to be true. Since 1980, the monthly prevalence of alcohol use among seniors has gradually declined, from 72% in 1980 to 57% in 1990. ***Daily use*** declined from a peak of 6.9% in 1979 to 3.7% in

1990; and the prevalence of drinking ***five or more drinks in a row*** during the prior two-week interval fell from 41% in 1983 to 32% in 1990.

### *College-Noncollege Differences*

- The data from college students show a somewhat different pattern in relation to alcohol use. They show less drop off in monthly prevalence since 1980 (about 7%), and no clearly discernible change in ***daily use*** or in ***occasions of heavy drinking***, which is at 41% in 1990—higher than the 32% among high school seniors. Since their noncollege age peers have been showing a net decrease in occasions of heavy drinking since 1980, this has resulted in a divergence between the college and noncollege segments on this important dimension.

- The 41% figure in ***occasions of heavy drinking*** is also higher than the rate observed among their age peers (i.e., those one to four years past high school) not in college (33%), which means that college students are well above average on this measure. Since the college-bound seniors *in* high school are consistently less likely to report occasions of heavy drinking than the noncollege-bound, this reflects their "catching up and passing" their peers after high school.

- In most surveys from 1980 onward, college students have had a ***daily drinking*** rate (3.8% in 1990) which is slightly lower than that of their age peers (4.9% in 1990), suggesting that they are somewhat more likely to confine their drinking to weekends, on which occasions they tend to drink a lot. Again, college men have much higher rates of daily drinking than college women: 5.8% vs. 2.2%. The rate of daily drinking has fallen some among the noncollege group from 8.7% in 1981 to 4.9% in 1990.

### *Male-Female Differences*

- There remains a quite substantial sex difference among high school seniors in the prevalence of ***occasions of heavy drinking*** (24% for females vs. 39% for males in 1990); this difference has been diminishing very gradually since the study began over a decade ago.

- There also remain very substantial sex differences in alcohol use among college students, and young adults generally, with males drinking more. For example, 50% of college males report having five or more drinks in a row over the previous four weeks vs. 34% of college females. However, there has been little change in the differences between 1980 and 1990.

## TRENDS IN CIGARETTE SMOKING

- A number of important findings have emerged from the study concerning ***cigarette smoking*** among American adolescents and young adults. Of greatest importance is the fact that by late adolescence sizeable proportions of young people still are establishing regular cigarette habits, despite the demonstrated health risks associated with smoking. In fact, since the study began in 1975, cigarettes have consistently comprised the class of substance most frequently used on a daily basis by high school students.

- While the ***daily smoking*** rate for seniors did drop considerably between 1977 and 1981 (from 29% to 20%), it has dropped very little in the nine years since (by another 1.2%), despite the appreciable downturn which has occurred in most other forms of drug use (including alcohol) during this period. And, despite all the adverse publicity and restrictive legislation addressed to the subject during the 1980's, the proportion of seniors who perceive "great risk" to the user of suffering physical (or other) harm from pack-a-day smoking has risen only 4% since 1980 (to 68% in 1990). That means that nearly a third of seniors still do not feel there is a great risk associated with smoking.

### *Age and Cohort-Related Differences*

- Initiation of daily smoking most often occurs in grades 6 through 9 (i.e., at modal ages 11–12 to 14–15), with rather little further initiation after high school, although a number of light smokers make the transition to heavy smoking in the first two years after high school. Analyses presented in this volume and elsewhere have shown that cigarette smoking shows a clear "cohort effect." That is, if a class (or birth) cohort establishes an unusually high rate of smoking at an early age relative to other cohorts, it is likely to remain high throughout the life cycle.

- As we reported in the Other Findings from the Study chapter in the 1986 volume in this series, some 53% of the half-pack-a-day (or more) smokers in senior year said that they had tried to quit smoking and found they could not. Of those who were daily smokers in high school, nearly three-quarters were daily smokers 7 to 9 years later (based on the 1985 survey), despite the fact that in high school only 5% of them thought they would "definitely" be smoking 5 years hence. Clearly, the smoking habit is established at an early age; it is difficult to break for those young people who have it; and young people greatly overrate their own ability to quit.

### *College-Noncollege Differences*

- There exists a striking difference among high school seniors between the college-bound and those not college-bound in terms of smoking rates. For example, smoking half-pack or more a day is more than two times as prevalent among the noncollege-bound (19% vs. 8%). Among respondents one to four years past high school, those not in college show the same dramatically higher rate of smoking compared to that found among those who are in college, with half-pack-a-day smoking standing at 20% and 8%, respectively.

### *Male-Female Differences*

- In 1990, females have slightly higher probabilities of being daily smokers among college students and high school seniors.

## SUMMARY AND CONCLUSIONS

- To summarize these findings on trends, over the last ten years there have been appreciable declines in the use of a number of the ***illicit drugs*** among seniors, and even larger declines in their use among American college students and young adults more generally. The stall in these favorable trends in all three populations in 1985, as well as an increase in active ***cocaine*** use that year, should serve as a reminder that these improvements cannot be taken for granted. Fortunately, in 1986 we saw the general decline resume and the prevalence of cocaine level off, albeit at peak levels; and since then the general decline continued, while cocaine use took a sharp downturn (in 1987) for the first time in more than a decade, and it continued to decline through 1990. ***Crack*** use began to decline in 1988 among seniors, and use is now dropping in all three populations.

- While the overall picture has improved considerably in recent years, the amount of illicit as well as licit drug use among America's younger age groups is still striking when one takes into account the following facts:

  By their late-twenties, over 80% of today's young adults have tried an ***illicit drug***, including over 60% who have tried some ***illicit drug other than*** (usually in addition to) ***marijuana***. Even for high school seniors these proportions still stand at 48% and 29%, respectively.

  By age 27, 40% have tried ***cocaine***; as early as the senior year of high school 9% have done so. Roughly one in every thirty seniors (3.5%) have tried the particularly dangerous form of cocaine called ***crack***; in the young adult sample 5.1% have tried it.

  Some 2.2% of high school seniors in 1990 smoke ***marijuana daily***, and roughly the same proportion (2.5%) of young adults aged 19 to 28 do, as well. Among all seniors in 1990, 10% had been daily marijuana smokers at some time for at least a month, and among young adults the comparable figure is 19%.

Some 32% of seniors have had ***five or more drinks in a row*** at least once in the prior two weeks, and such behavior tends to increase among young adults one to four years past high school. The prevalence of such behavior among male college students reaches 50%.

Some 29% of seniors have smoked ***cigarettes*** in the month prior to the survey and 19% already are daily smokers. In addition, many of the lighter smokers will convert to heavy smoking after high school. For example, more than one in every five young adults aged 19 to 28 is a daily smoker (21%), and one in six (17%) smokes a half-pack-a-day or more.

- Despite the improvements in recent years, it is still true that this nation's high school students and other young adults show a level of involvement with illicit drugs which is greater than can be found in any other industrialized nation in the world. Even by longer-term historical standards in this country, these rates remain extremely high. Heavy drinking also remains widespread and troublesome; and certainly the continuing initiation of large proportions of young people to cigarette smoking is a matter of the greatest public health concern.

- Finally, we note the seemingly unending capacity of pharmacological experts and amateurs to discover new substances with abuse potential that can be used to alter mood and consciousness. While as a society we have made significant progress on a number of fronts in the fight against drug abuse, we must continually be preparing for, and remaining vigilant against, the opening of new fronts, as well as the reemergence of trouble on the older ones.

## Chapter 3

# STUDY DESIGN AND PROCEDURES

The research design, sampling plans, and field procedures used in both the in-school surveys of seniors, and the follow-up surveys of young adults, are presented in this chapter. Related methodological issues such as response rates, population coverage, and the validity of the measures will also be discussed.

## RESEARCH DESIGN AND PROCEDURES FOR THE SURVEYS OF SENIORS

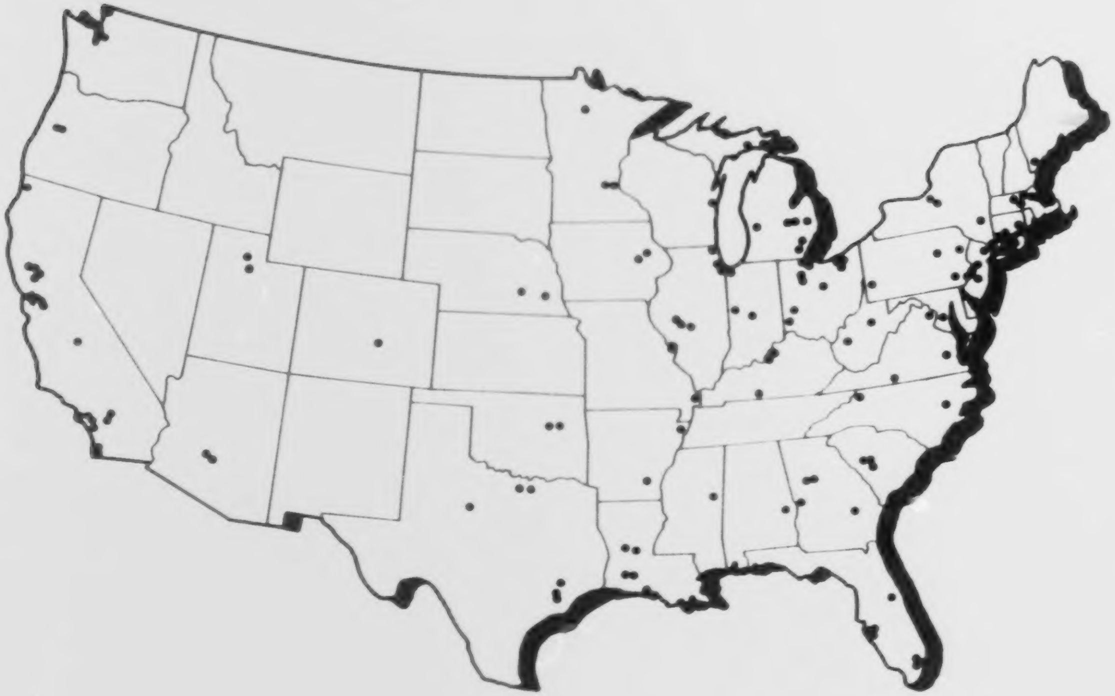
The data from high school seniors are collected during the spring of each year, beginning with the class of 1975. Each data collection takes place in approximately 125 to 135 public and private high schools selected to provide an accurate representative cross-section of high school seniors throughout the coterminous United States. (See Figure 1.)

***The population under study***. There are several reasons for choosing the senior year of high school as an optimal point for monitoring the drug use and related attitudes of youth. First, the completion of high school represents the end of an important developmental stage in this society, since it demarcates both the end of universal public education and, for many, the end of living in the parental home. Therefore, it is a logical point at which to take stock of the cumulated influences of these two environments on American youth. Further, the completion of high school represents the jumping-off point from which young people diverge into widely differing social environments and experiences. Finally, there are some important practical advantages to building a system of data collections around samples of high school seniors. The need for systematically repeated, large-scale samples from which to make reliable estimates of change requires that considerable stress be laid on cost efficiency as well as feasibility. The last year of high school constitutes the final point at which a reasonably good national sample of an age-specific cohort can be drawn and studied economically.

***The omission of dropouts***. One limitation in the design to date has been that it does not include in the target population those young men and women who drop out of high school before graduation—between 15 and 20 percent of each age cohort nationally, according to U.S. Census statistics. The omission of high school dropouts does introduce biases in the estimation of certain characteristics of the entire age group; however, for most purposes, the small proportion of dropouts sets outer limits on the bias. Further, since the bias from missing dropouts should remain just about constant from year to year, their omission should introduce little or no bias in *change* estimates. Indeed, we believe the changes observed over time for those who finish high school are likely to parallel the changes for dropouts in most instances. An Appendix to this volume addresses the likely effects of the exclusion of dropouts on estimates of prevalence of drug use and trends in drug use among the entire age cohort; and the reader is referred to it for a more detailed discussion of this issue.

FIGURE 1

**Location of Schools Surveyed**



***Sampling procedures***. A multi-stage random sampling procedure is used for securing the nationwide sample of high school seniors each year. Stage 1 is the selection of particular geographic areas, Stage 2 the selection of one or more high schools in each area, and Stage 3 the selection of seniors within each high school.

This three-stage sampling procedure yielded the numbers of participating schools and students shown in Table 1.

***Questionnaire administration***. About ten days before the administration, students are given flyers explaining the study. The actual questionnaire administrations are conducted by the local Institute for Social Research representatives and their assistants, following standardized procedures detailed in a project instruction manual. The questionnaires are administered in classrooms during a normal class period whenever possible; however, circumstances in some schools require the use of larger group administrations.

***Questionnaire format***. Because many questions are needed to cover all of the topic areas in the study, much of the questionnaire content is divided into six different questionnaire forms which are distributed to participants in an ordered sequence that ensures six virtually identical subsamples. (Five questionnaire forms were used between 1975 and 1988.) About one-third of each questionnaire form consists of key or "core" variables which are common to all forms. All demographic variables, and nearly all of the drug *use* variables included in this report, are included in this "core" set of measures. Many of the questions dealing with attitudes, beliefs, and perceptions of relevant features of the social environment are contained in only a single form, however, and are thus based on one-sixth as many cases (i.e., approximately 2,600 respondents in 1990) or one-fifth as many cases in 1975–1988 (e.g., approximately 3,300 respondents in 1988). All tables in this report give the sample sizes upon which the statistics are based, stated in terms of weighted numbers of cases (which are roughly equivalent to the actual numbers of cases).

## RESEARCH DESIGN AND PROCEDURES FOR THE FOLLOW-UP SURVEYS

Beginning with the graduating class of 1976, each class is followed up annually after high school on a continuing basis. From the roughly 16,000 to 17,000 seniors originally participating in a given class, a representative sample of 2,400 individuals is chosen for follow-up. In order to ensure sufficient numbers of drug users in the follow-up surveys, those fitting certain criteria of current drug use (that is, those reporting 20 or more uses of marijuana, or any use of any of the other illicit drugs, in the previous 30 days) are selected with higher probability (by a factor of 3.0) than the remaining seniors. Differential weighting is then used in all follow-up analyses to compensate for the differential sampling probabilities. Because those in the drug-using stratum receive a weight of only .33 in the calculation of all statistics to compensate for their overrepresentation, the actual numbers of follow-up cases are somewhat larger than the weighted numbers reported in the tables.

## TABLE 1
## Sample Sizes and Response Rates

| | Class of 1975 | Class of 1976 | Class of 1977 | Class of 1978 | Class of 1979 | Class of 1980 | Class of 1981 | Class of 1982 | Class of 1983 | Class of 1984 | Class of 1985 | Class of 1986 | Class of 1987 | Class of 1988 | Class of 1989 | Class of 1990 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Number public schools** | 111 | 108 | 108 | 111 | 111 | 107 | 109 | 116 | 112 | 117 | 115 | 113 | 117 | 113 | 111 | 114 |
| **Number private schools** | 14 | 15 | 16 | 20 | 20 | 20 | 19 | 21 | 22 | 17 | 17 | 16 | 18 | 19 | 22 | 23 |
| **Total number schools** | 125 | 123 | 124 | 131 | 131 | 127 | 128 | 137 | 134 | 134 | 132 | 129 | 135 | 132 | 133 | 137 |
| **Total number students** | 15,791 | 16,678 | 18,436 | 18,924 | 16,662 | 16,524 | 18,267 | 18,348 | 16,947 | 16,499 | 16,502 | 15,713 | 16,843 | 16,795 | 17,142 | 15,676 |
| **Student response rate** | 78% | 77% | 79% | 83% | 82% | 82% | 81% | 83% | 84% | 83% | 84% | 83% | 84% | 83% | 86% | 86% |

The 2,400 selected respondents from each class are randomly assigned to one of two matching groups of 1,200 each; one group is surveyed on even-numbered calendar years, while the other group is surveyed on odd-numbered years. This two-year cycle is intended to reduce respondent burden, and thus yield a better retention rate across years.

***Follow-up procedures***. Using information provided by respondents at the time of the senior survey (name, address, phone number, and the name and address of someone who would always know how to reach them), mail contacts are maintained with those selected for inclusion in the follow-up panels. Newsletters are sent each year, and name and address corrections are requested. The questionnaires are sent by certified mail in the spring of each year. A check for $5.00, made payable to the respondent, is attached to the front of each questionnaire. Reminder letters and post cards go out at fixed intervals thereafter; finally, those not responding receive a prompting phone call from the Survey Research Center's phone interviewing facility in Ann Arbor. If requested, a second copy of the questionnaire is sent; but no questionnaire content is administered by phone.

***Panel retention rates***. To date the panel retention rates have remained quite high. In the first follow-up after high school, about 82% of the original panel have returned questionnaires. The retention rate reduces with time, as would be expected. The 1990 panel retention from the class of 1976—the oldest of the panels, now aged 32 (14 years past high school)—still remains at 69%.

***Corrections for panel attrition***. Since attrition is to a modest degree associated with drug use, we have introduced corrections into the prevalence estimates presented here for the follow-up panels. These raise the prevalence estimates from what they would be uncorrected, but only slightly. We believe the resulting estimates to be the most accurate obtainable for the population of high school senior graduates but still low for the age group as a whole, due to the omission of dropouts and absentees from the population covered by the original panels.[3]

## REPRESENTATIVENESS AND VALIDITY

***School participation***. Schools are invited to participate in the study for a two-year period. With very few exceptions, each school in the original sample, after participating for one year of the study, has agreed to participate for a second year. Each year thus far, from 66 percent to 80 percent of the schools invited to participate initially have agreed to do so; for each school refusal, a similar school (in terms of size, geographic area, urbanicity, etc.) is recruited as a replacement. The selection of replacement schools almost entirely removes problems of bias in region, urbanicity, and the like, that might result from certain schools refusing to participate. Other potential biases could be more subtle, however. If, for example, it turned out that most schools with "drug problems" refused to participate, that would seriously bias the sample. And if any other single factor were dominant in most refusals, that also might suggest a source of serious bias. In fact, however, the reasons for a school refusing to participate are varied and are often a function of happenstance events; only a very small proportion specifically object to the drug content of the survey. Thus we feel quite confident that school refusals have not seriously biased the surveys.

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[3] The intent of the weighting process is to correct for the effects of differential attrition on follow-up drug use estimates. Different weights are used for different substances. Cigarettes, alcohol, and marijuana each have one weight for every follow-up of each graduating class. The weights are based on the observed differences in the distribution on an index of use of the relevant substance in the follow-up compared to the base year distribution. For example, the distribution on the index of marijuana use in the 1988 follow-up of approximately 1,000 respondents from the class of 1976 was compared to the original 1976 base-year distribution for the entire base-year class of 17,000 respondents; and weights were derived which, when applied to the base-year data for only those in the 1988 follow-up, would reproduce the original base-year frequency distribution. A similar procedure is used to determine a weight for all illicits other than marijuana combined. In this case, however, an average weight is derived across graduating classes. Thus, the same weight is applied, for example, to all respondents in the follow-up of 1988, regardless of when they graduated from high school.

Schools are selected in such a way that half of each year's sample is comprised of schools which participated the previous year, and half is comprised of schools which will participate the next year. This staggered half-sample design is used to check on possible errors in the year-to-year trend estimates due to school turnover. Specifically, separate sets of one-year trends are computed using first that half-sample of schools which participated in both 1975 ***and*** 1976, then the half-sample which participated in both 1976 ***and*** 1977, and so on. Thus, each one-year trend estimate derived in this way is based on a constant set of about 65 schools. When the resulting trend data (examined separately for each class of drugs) are compared with trends based on the total samples of schools, the results are highly similar, indicating that the trend estimates are little affected by turnover or shifting refusal rates in the school samples. (The absolute prevalence estimates for a given year are not as accurate using just the half-sample, however.)

***Student participation***. Completed questionnaires are obtained from 77% to 86% of all sampled students in participating schools each year (see Table 1). The single most important reason that students are missed is absence from class at the time of data collection; in most cases it is not workable to schedule a special follow-up data collection for absent students. Students with fairly high rates of absenteeism also report above-average rates of drug use; therefore, there is some degree of bias introduced into the prevalence estimates by missing the absentees. Much of that bias could be corrected through the use of special weighting; however, we decided not to use such a weighting procedure because the bias in overall drug use estimates was determined to be quite small, and because the necessary weighting procedures would have introduced undesirable complications. (Appendix A of one of our earlier reports[4] provides a discussion of this point and the Appendix to this report shows trend and prevalence estimates which would result with corrections for absentees included.)

Of course, some students are not absent from class, but simply refuse when asked to complete a questionnaire. However, the proportion of explicit refusals amounts to less than 1 percent of the target sample.

***Sampling accuracy of the estimates***. For purposes of this introduction, it is sufficient to note that drug use estimates based on the total sample of seniors each year have confidence intervals that average about ±1% (as shown in Table 2, confidence intervals vary from ±2.1% to smaller than ±0.3%, depending on the drug). This means that had we been able to invite all schools and all seniors in the 48 coterminous states to participate, the results from such a massive survey should be within about one percentage point of our present findings for most drugs at least 95 times out of 100. We consider this to be a high level of sampling accuracy, and one that permits the detection of fairly small changes from one year to the next.

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[4] Johnston, L.D., O'Malley, P.M., & Bachman, J.G. (1984). *Drugs and American high school students: 1975–1983*. (DHHS Publication No. ADM 85–1374.) Washington, D.C.: U.S. Government Printing Office.

## VALIDITY OF THE MEASURES OF SELF-REPORTED DRUG USE

The question always arises whether sensitive behaviors like drug use are honestly reported. Like most studies dealing with sensitive behaviors, we have no direct, objective validation of the present measures; however, the considerable amount of inferential evidence that exists strongly suggests that the self-report questions produce largely valid data. A more complete discussion of the contributing evidence which leads to this conclusion may be found in other publications; here we will only briefly summarize the evidence.[5]

First, using a three-wave panel design, we established that the various measures of self-reported drug use have a high degree of reliability—a necessary condition for validity.[6] In essence, this means that respondents were highly consistent in their self-reported behaviors over a three- to four-year time interval. Second, we found a high degree of consistency among logically related measures of use within the same questionnaire administration. Third, the proportion of seniors reporting some illicit drug use by senior year has reached two-thirds of all respondents in peak years and nearly as high as 80% in some follow-up years, which constitutes *prima facie* evidence that the degree of underreporting must be very limited. Fourth, the seniors' reports of use by their friends—about which they would presumably have less reason to distort—has been highly consistent with self-reported use in the aggregate in terms of both prevalence and trends in prevalence, as will be discussed later in this report. Fifth, we have found self-reported drug use to relate in consistent and expected ways to a number of other attitudes, behaviors, beliefs, and social situations—in other words, there is strong evidence of "construct validity." Sixth, the missing data rates for the self-reported use questions are only very slightly higher than for the preceding nonsensitive questions, in spite of the instruction to respondents to leave blank those drug use questions they felt they could not answer honestly. And seventh, the great majority of respondents, when asked, say they would answer such questions honestly if they were users.

This is not to argue that self-reported measures of drug use are valid in all cases. In the present study we have gone to great lengths to create a situation and set of procedures in which students feel that their confidentiality will be protected. We have also tried to present a convincing case as to why such research is needed. We think the evidence suggests that a high level of validity has been obtained. Nevertheless, insofar as there exists any remaining reporting bias, we believe it to be in the direction of underreporting. Thus, we believe our estimates to be lower than their true values, even for the obtained samples, but not substantially so.

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[5] Johnston, L.D., & O'Malley, P.M. (1985). Issues of validity and population coverage in student surveys of drug use. In B.A. Rouse, N.J. Kozel, & L.G. Richards (Eds.), *Self-report methods of estimating drug use: Meeting current challenges to validity* (NIDA Research Monograph No. 57; (ADM) 85-1402). Washington, D.C.: U.S. Government Printing Office; Johnston, L.D., O'Malley, P.M., & Bachman, J.G. (1984). *Drugs and American high school students: 1975-1983* (DHHS (ADM) 85-1374). Washington, D.C.: U.S. Government Printing Office.

[6] O'Malley, P.M., Bachman, J.G., & Johnston, L.D. (1983). Reliability and consistency in self-reports of drug use. *International Journal of the Addictions, 18*, 805-824.

***Consistency and the measurement of trends***. One further point is worth noting in a discussion of the validity of the findings. The Monitoring the Future project is designed to be sensitive to changes from one time to another. Accordingly, the measures and procedures have been standardized and applied consistently across each data collection. To the extent that any biases remain because of limits in school and/or student participation, and to the extent that there are distortions (lack of validity) in the responses of some students, it seems very likely that such problems will exist in much the same way from one year to the next. In other words, biases in the survey estimates will tend to be consistent from one year to another, which means that our measurement of ***trends*** should be affected very little by any such biases. The smooth and consistent nature of most trend curves reported for the various drugs provides rather compelling empirical support for this assertion.

# HIGH SCHOOL SENIORS

## Chapter 4

# PREVALENCE OF DRUG USE AMONG HIGH SCHOOL SENIORS

This section summarizes the levels of drug use reported by the high school class of 1990. Prevalence and frequency of use data are included for lifetime use, use in the past year, and use in the past month. The prevalence of current daily use is also provided. There is also a comparison of key subgroups in the population based on sex, college plans, region of the country, population density or urbanicity, and socioeconomic status.

Because we think that the revised questions on amphetamine use, introduced in 1982, give a more accurate picture of the actual use of that controlled substance, all references to amphetamine prevalence rates in this section will be based on that revised version (including references to proportions using "any illicit drug" or "any illicit drug other than marijuana").

It should be noted that all of the prevalence statistics given in this section are based on participating seniors only. Prevalence rate estimates reflecting adjustments for absentees and dropouts may be found in the Appendix to this report.

## PREVALENCE AND FREQUENCY OF DRUG USE IN 1990: ALL SENIORS

### *Lifetime, Annual, and Monthly Prevalence and Frequency*

- Nearly half of all seniors (48%) report ***illicit drug use*** at some time in their lives. However, a substantial proportion of them have used only ***marijuana*** (19% of the sample or 39% of all illicit users).

- Nearly a third of all seniors (29%) report using an ***illicit drug other than marijuana*** at some time.[7]

- Table 2 provides the 95% confidence interval around the lifetime prevalence estimate for each drug, and Figure 2 gives a ranking of the various drug classes on the basis of their lifetime prevalence figures.

- ***Marijuana*** is by far the most widely used illicit drug with 41% reporting some use in their lifetime, 27% reporting some use in the past year, and 14% reporting some use in the past month.

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[7] Use of "other illicit drugs" includes any use of hallucinogens, cocaine, or heroin ***or*** any use of other opiates, stimulants, barbiturates, methaqualone (excluded in 1990), or tranquilizers that is not under a doctor's orders.

## TABLE 2

### Lifetime Prevalence (Percent Ever Used) of Various Types of Drugs: Observed Estimates and 95% Confidence Limits Class of 1990

(Approx. N = 15200)

| | Lower limit | Observed estimate | Upper limit |
|---|---|---|---|
| Marijuana/Hashish | 38.5 | 40.7 | 42.9 |
| Inhalants[a] | 16.9 | 18.0 | 19.2 |
| *Inhalants Adjusted*[b] | *17.1* | *18.5* | *20.0* |
| Amyl & Butyl Nitrites[c] | 1.5 | 2.1 | 3.0 |
| Hallucinogens | 8.4 | 9.4 | 10.6 |
| *Hallucinogens Adjusted*[d] | *8.7* | *9.7* | *10.8* |
| LSD | 7.7 | 8.7 | 9.8 |
| PCP[c] | 2.0 | 2.8 | 3.8 |
| Cocaine | 8.4 | 9.4 | 10.6 |
| "Crack" | 2.9 | 3.5 | 4.3 |
| Other cocaine[e] | 7.8 | 8.6 | 9.5 |
| Heroin | 1.0 | 1.3 | 1.7 |
| Other opiates[f] | 7.6 | 8.3 | 9.1 |
| *Stimulants Adjusted*[f,g] | *16.1* | *17.5* | *19.0* |
| Crystal Methamphetamine ("Ice")[h] | 2.3 | 2.7 | 3.2 |
| Sedatives[c,f] | 6.2 | 7.5 | 9.1 |
| Barbiturates[f] | 5.9 | 6.8 | 7.8 |
| Methaqualone[c,f] | 1.6 | 2.3 | 3.3 |
| Tranquilizers[f] | 6.3 | 7.2 | 8.2 |
| Alcohol | 87.8 | 89.5 | 91.0 |
| Cigarettes | 62.6 | 64.4 | 66.2 |
| Steroids[c] | 2.1 | 2.9 | 4.0 |

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[a] Data based on five questionnaire forms. N is five-sixths of N indicated.

[b] Adjusted for underreporting of amyl and butyl nitrites. See text for details.

[c] Data based on a single questionnaire form. N is one-sixth of N indicated.

[d] Adjusted for underreporting of PCP. See text for details.

[e] Data based on four questionnaire forms. N is four-sixths of N indicated.

[f] Only drug use which was not under a doctor's orders is included here.

[g] Based on the data from the revised question, which attempts to exclude the inappropriate reporting of non-prescription stimulants.

[h] Data based on two questionnaire forms. N is two-sixths of N indicated.

- The most widely used classes of other illicit drugs are ***stimulants*** and ***inhalants*** (18% lifetime prevalence, adjusted). Next come ***hallucinogens*** (adjusted) at 10% and ***cocaine*** at 9%. These are followed closely by ***opiates other than heroin*** and ***sedatives*** at 8%, and ***tranquilizers*** at 7%.[8]

- ***Crack cocaine*** is the form which comes in small chunks or "rocks," which are smoked, thus providing a more rapid and intense high for the user. It came onto the American scene very rapidly during the mid-80's. In the 1986 survey we included for the first time a single question about crack use, but it was contained in only a single questionnaire form and asked only of those indicating some cocaine use during the prior twelve months. In the 1987–1990 surveys we included our full standard set of three questions asked for each drug (frequency of use in lifetime, last 12 months, and last 30 days) for crack use. For several years these were included in two questionnaire forms (N=6,500 in 1987 and 1988, N=5,500 in 1989). The crack prevalence questions were included in all six questionnaire forms in 1990. The results in 1990 were as follows:

  Some 3.5% of all seniors indicated having tried ***crack*** at some time in their lives. Over half of those (1.9% of all seniors) reported use in the past year, but only one-fifth of them (0.7% of all seniors) reported use in the last month. Among those who used cocaine in any form during the past year (5.3% of all seniors), about 36% used it in crack form, usually in addition to using it in powdered form.

- The inhalant estimates have been adjusted upward because we observed that not all users of one subclass of inhalants—***amyl and butyl nitrites*** (described below)—report themselves as inhalant users. Because we included questions specifically about nitrite use for the first time in one 1979 questionnaire form, we were able to discover this problem and make estimates of the degree to which inhalant use was being underreported in the overall estimates. As a result, all prevalence estimates for ***inhalants*** have been increased, with the proportional increase being greater for the more recent time intervals (i.e., last month, last year) because use of the other common inhalants, such as glue and aerosols, is more likely to have been discontinued prior to senior year, making nitrite use proportionally more important in later years.

- The specific classes of inhalants known as ***amyl and butyl nitrites***, which are sold legally and go by the street names of "poppers" or "snappers" and such brand names as Locker Room and Rush, have been tried by roughly one in fifty seniors (2.1%).

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[8] Only use which was not medically supervised is included in the figures cited in the main body of this report.

## TABLE 3

### Lifetime Prevalence (Percent Ever Used) and Recency of Use of Various Types of Drugs Class of 1990

(Approx. N = 15200)

| | Ever used | Past month | Past year, not past month | Not past year | Never used |
|---|---|---|---|---|---|
| Marijuana/Hashish | 40.7 | 14.0 | 13.0 | 13.7 | 59.3 |
| Inhalants[a] | 18.0 | 2.7 | 4.2 | 11.1 | 82.0 |
| *Inhalants Adjusted*[b] | *18.5* | *2.9* | *4.6* | *11.0* | *81.5* |
| Amyl & Butyl Nitrites[c] | 2.1 | 0.6 | 0.8 | 0.7 | 97.9 |
| Hallucinogens | 9.4 | 2.2 | 3.7 | 3.5 | 90.6 |
| *Hallucinogens Adjusted*[d] | *9.7* | *2.3* | *3.7* | *3.7* | *90.3* |
| LSD | 8.7 | 1.9 | 3.5 | 3.3 | 91.3 |
| PCP[c] | 2.8 | 0.4 | 0.8 | 1.6 | 97.2 |
| Cocaine | 9.4 | 1.9 | 3.4 | 4.1 | 90.6 |
| "Crack" | 3.5 | 0.7 | 1.2 | 1.6 | 96.5 |
| Other cocaine[e] | 8.6 | 1.7 | 2.9 | 4.0 | 91.4 |
| Heroin | 1.3 | 0.2 | 0.3 | 0.8 | 98.7 |
| Other opiates[f] | 8.3 | 1.5 | 3.0 | 3.8 | 91.7 |
| *Stimulants Adjusted*[f,g] | *17.5* | *3.7* | *5.4* | *8.4* | *82.5* |
| Crystal Methamphetamine ("Ice")[i] | 2.7 | 0.6 | 0.7 | 1.4 | 97.3 |
| Sedatives[c,f] | 7.5 | 1.4 | 2.2 | 3.9 | 92.5 |
| Barbiturates[f] | 6.8 | 1.3 | 2.1 | 3.4 | 93.2 |
| Methaqualone[c,f] | 2.3 | 0.2 | 0.5 | 1.6 | 97.7 |
| Tranquilizers[f] | 7.2 | 1.2 | 2.3 | 3.7 | 92.8 |
| Alcohol | 89.5 | 57.1 | 23.5 | 8.9 | 10.5 |
| Cigarettes | 64.4 | 29.4 | (35.0)[h] | | 35.6 |
| Steroids[c] | 2.9 | 1.0 | 0.7 | 1.2 | 97.1 |

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[a] Data based on five questionnaire forms. N is five-sixths of N indicated.

[b] Adjusted for underreporting of amyl and butyl nitrites. See text for details.

[c] Data based on a single questionnaire form. N is one-sixth of N indicated.

[d] Adjusted for underreporting of PCP. See text for details.

[e] Data based on four questionnaire forms. N is four-sixths of N indicated.

[f] Only drug use which was not under a doctor's orders is included here.

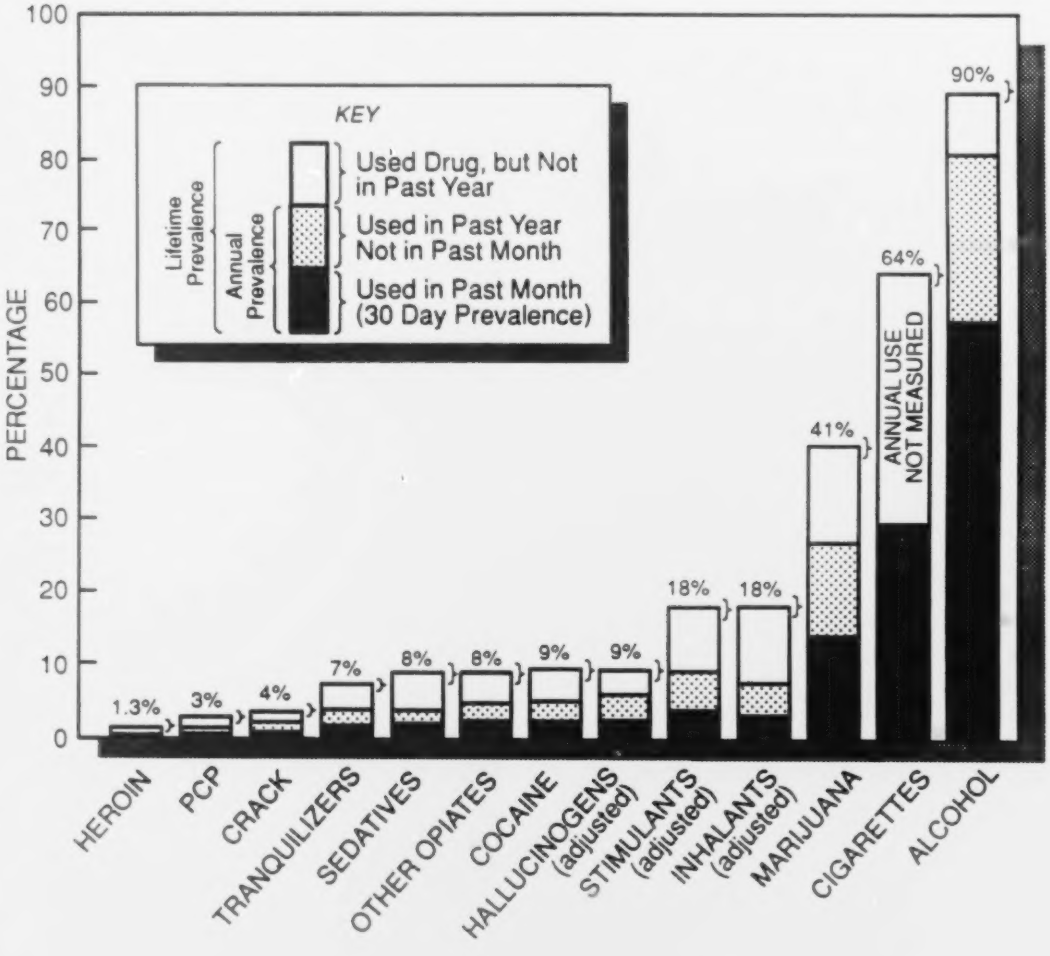
[g] Based on the data from the revised question, which attempts to exclude the inappropriate reporting of non-prescription stimulants.

[h] The combined total for the two columns is shown because the question asked did not discriminate between the two answer categories.

[i] Data based on two questionnaire forms. N is two-sixths of N indicated.

FIGURE 2

**Prevalence and Recency of Use**
Various Types of Drugs, Class of 1990



NOTE: The bracket near the top of a bar indicates the lower and upper limits of the 95% confidence interval.

- We also discovered in 1979, by adding questions specifically about ***PCP*** use, that some users of PCP do not report themselves as users of hallucinogens—even though PCP is explicitly included as an example in the questions about hallucinogens. Thus, from 1979 onward the ***hallucinogen*** prevalence and trend estimates also have been adjusted upward to correct for this known underreporting.[9]

- Lifetime prevalence for the specific hallucinogenic drug ***PCP*** now stands at 2.8%, significantly lower than that of the other most widely used hallucinogen, ***LSD*** (lifetime prevalence, 8.7%).

- ***Opiates other than heroin*** have been used by about one in twelve seniors (8.3%).

- Only 1.3% of the sample admitted to ever using any ***heroin***, the most infrequently used drug. But given the highly illicit nature of this drug, we deem it the most likely to be underreported.

- Within the general class "sedatives," the specific drug ***methaqualone*** is now used by considerably fewer seniors (2.3% lifetime prevalence) than the other, much broader subclass of sedatives, ***barbiturates*** (6.8%).

- The illicit drug classes remain in roughly the same order whether ranked by lifetime, annual, or monthly prevalence, as the data in Figure 2 illustrate. The only important change in ranking occurs for ***inhalants***, because use of certain of them, like glues and aerosols, tends to be discontinued at a relatively early age. ***Tranquilizer*** use also ranks lower in terms of current use than it does on lifetime use.

- Use of either of the two major licit drugs, alcohol and cigarettes, remains more widespread than use of any of the illicit drugs. Nearly all students have tried ***alcohol*** (90%) and more than half (57%) are current users, i.e., they have used it in just the past month.

- Nearly two-thirds (64%) of seniors report having tried ***cigarettes*** at some time, and nearly one-third (29%) smoked at least some in the past month.

- While most of the discussion in this volume will focus on prevalence rates for different time periods (i.e., lifetime, annual, and 30-day), some readers will be interested in more detailed information about the frequency with which various drugs have been used in these same time periods. Tables 4 and 5 present such frequency-of-use information in as much detail as the original question and answer sets contain.

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[9] Because the data to adjust inhalant and hallucinogen use are available from only a single questionnaire form in a given year, the original uncorrected variables will be used in most relational analyses. We believe relational analyses will be least affected by these underestimates and that the most serious impact is on prevalence estimates, which are adjusted appropriately.

### *Daily Prevalence*

- Frequent use of any of these drugs is of greatest concern from a health and safety standpoint. Tables 9 and 13 and Figure 3 show the prevalence of current daily or near-daily use of the various classes of drugs. For all drugs except cigarettes, respondents are considered daily users if they indicate that they had used the drug on twenty or more occasions in the preceding 30 days. In the case of cigarettes, respondents explicitly state the use of one or more cigarettes per day.

- The tables and figures show that ***cigarettes*** are used daily by more of the respondents (19%) than any of the other drug classes. In fact, 11.3% say they smoke half-a-pack or more per day.

- Another important fact is that ***marijuana*** is still used on a daily or near-daily basis by about one in every 45 seniors (2.2%). A larger proportion (3.7%) drink alcohol that often. (A discussion of levels of past daily use and cumulative daily use of marijuana is contained in the last chapter of this volume.)

- Less than 1% of the respondents report daily use of any one of the illicit drugs other than marijuana. Still, 0.3% report daily use of ***inhalants*** (adjusted) and ***hallucinogens*** (adjusted). The next highest daily-use figures are for ***stimulants*** at 0.2% followed by a number of drug classes at 0.1%. While very low, these figures are not inconsequential, given that 1% of the high school class of 1990 represents between 25,000 and 30,000 individuals.

- While ***daily alcohol use*** stands at 3.7% for this age group, a substantially greater proportion report ***occasional heavy drinking***. In fact, almost a third of all seniors (32%) state that on at least one occasion during the prior two-week interval they had five or more drinks in a row.

## NONCONTINUATION RATES

An indication of the extent to which people who try a drug do not continue to use it can be derived from calculating the percentage, based on those who ever used a drug (once or more), who did not use it the 12 months preceding the survey.[10] These "noncontinuation rates" are provided for all drug classes in Figure 4 for the class of 1990. We use the

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[10] This operationalization of noncontinuation has an inherent problem in that users of a given drug who initiate use in senior year by definition cannot be noncontinuers. Thus, the definition tends to understate the noncontinuation rate, particularly for drugs that tend to be initiated late in high school rather than in earlier years.

## TABLE 4

### Lifetime, Annual and Thirty-Day Frequency of Use of Various Types of Drugs, Class of 1990

(Entries are percentages)

| | Marijuana | Inhalants[a] | Amyl/Butyl Nitrites | Hallucinogens[a] | LSD | PCP | Cocaine[b] | 'Crack'[b] | Other Cocaine[b] | Heroin | Other Opiates | Stimulants[c] (adjusted) | Barbiturates | Methaqualone | Tranquilizers | Alcohol | Ice | Steroids |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Approx. N =** | 15200 | 12600 | 2600 | 15200 | 15200 | 2600 | 15200 | 15200 | 10100 | 15200 | 15200 | 15200 | 15200 | 2600 | 15200 | 15200 | 5000 | 2600 |
| **Lifetime Frequency** | | | | | | | | | | | | | | | | | | |
| **No occasions** | 59.3 | 82.0 | 97.9 | 90.6 | 91.3 | 97.2 | 90.6 | 96.5 | 91.4 | 98.7 | 91.7 | 82.5 | 93.2 | 97.7 | 92.8 | 10.5 | 97.3 | 97.1 |
| **1-2 occasions** | 11.2 | 8.9 | 0.8 | 3.7 | 4.0 | 1.9 | 3.9 | 1.6 | 4.2 | 0.9 | 4.1 | 7.6 | 3.4 | 1.3 | 3.8 | 9.0 | 1.6 | 1.3 |
| **3-5 occasions** | 6.6 | 3.8 | 0.6 | 2.0 | 1.4 | 0.2 | 1.7 | 0.6 | 1.3 | 0.1 | 1.8 | 3.6 | 1.3 | 0.4 | 1.4 | 10.2 | 0.4 | 0.3 |
| **6-9 occasions** | 4.3 | 1.7 | 0.1 | 1.0 | 1.1 | 0.2 | 0.8 | 0.4 | 0.7 | 0.1 | 0.9 | 1.7 | 0.7 | 0.2 | 0.6 | 9.4 | 0.1 | 0.4 |
| **10-19 occasions** | 5.2 | 1.5 | 0.1 | 1.3 | 0.9 | 0.1 | 1.2 | 0.3 | 1.0 | * | 0.7 | 1.8 | 0.5 | 0.2 | 0.6 | 12.9 | 0.1 | 0.2 |
| **20-39 occasions** | 4.2 | 0.8 | 0.2 | 0.5 | 0.5 | 0.1 | 0.5 | 0.2 | 0.5 | 0.1 | 0.3 | 1.1 | 0.3 | * | 0.3 | 13.5 | 0.2 | 0.2 |
| **40 or more** | 9.3 | 1.2 | 0.3 | 0.9 | 0.8 | 0.3 | 1.2 | 0.4 | 1.0 | 0.1 | 0.6 | 1.7 | 0.6 | 0.1 | 0.4 | 34.5 | 0.4 | 0.5 |
| **Annual Frequency** | | | | | | | | | | | | | | | | | | |
| **No occasions** | 73.0 | 93.1 | 98.6 | 94.1 | 94.6 | 98.8 | 94.7 | 98.1 | 95.4 | 99.5 | 95.5 | 90.9 | 96.6 | 99.3 | 96.5 | 19.4 | 98.7 | 98.3 |
| **1-2 occasions** | 9.5 | 3.6 | 0.8 | 2.7 | 2.9 | 0.7 | 2.3 | 1.0 | 2.1 | 0.3 | 2.4 | 4.2 | 1.9 | 0.4 | 2.1 | 17.2 | 0.7 | 0.7 |
| **3-5 occasions** | 4.7 | 1.3 | 0.1 | 1.7 | 1.2 | 0.2 | 1.2 | 0.4 | 0.9 | * | 1.0 | 1.7 | 0.7 | 0.2 | 0.6 | 14.0 | 0.1 | 0.3 |
| **6-9 occasions** | 3.1 | 0.7 | 0.2 | 0.5 | 0.5 | 0.1 | 0.6 | 0.2 | 0.6 | * | 0.4 | 1.1 | 0.3 | * | 0.3 | 11.3 | 0.1 | 0.2 |
| **10-19 occasions** | 3.3 | 0.5 | * | 0.6 | 0.4 | * | 0.6 | 0.2 | 0.5 | * | 0.3 | 0.9 | 0.3 | – | 0.3 | 14.2 | 0.2 | 0.2 |
| **20-39 occasions** | 2.2 | 0.4 | 0.1 | 0.2 | 0.2 | 0.1 | 0.3 | 0.1 | 0.3 | * | 0.1 | 0.5 | 0.2 | * | 0.1 | 10.8 | 0.1 | 0.1 |
| **40 or more** | 4.2 | 0.4 | 0.2 | 0.2 | 0.2 | 0.1 | 0.3 | 0.1 | 0.2 | * | 0.2 | 0.5 | 0.1 | – | 0.1 | 13.2 | 0.1 | 0.2 |
| **30-Day Frequency** | | | | | | | | | | | | | | | | | | |
| **No occasions** | 86.0 | 97.3 | 99.4 | 97.8 | 98.1 | 99.6 | 98.1 | 99.3 | 98.3 | 99.8 | 98.5 | 96.3 | 98.7 | 99.8 | 98.8 | 42.9 | 99.4 | 99.0 |
| **1-2 occasions** | 6.0 | 1.6 | 0.4 | 1.3 | 1.3 | 0.1 | 1.1 | 0.4 | 1.1 | 0.1 | 0.9 | 2.1 | 0.8 | 0.1 | 0.7 | 22.8 | 0.2 | 0.4 |
| **3-5 occasions** | 2.4 | 0.4 | * | 0.5 | 0.3 | * | 0.4 | 0.1 | 0.3 | * | 0.3 | 0.7 | 0.2 | 0.1 | 0.2 | 14.9 | * | 0.1 |
| **6-9 occasions** | 1.5 | 0.3 | – | 0.2 | 0.1 | – | 0.2 | 0.1 | 0.2 | * | 0.1 | 0.4 | 0.1 | * | 0.1 | 9.5 | 0.1 | * |
| **10-19 occasions** | 1.9 | 0.2 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | * | 0.1 | 0.3 | 0.1 | * | 0.1 | 6.2 | 0.1 | 0.2 |
| **20-39 occasions** | 1.1 | 0.1 | – | * | * | 0.1 | * | * | 0.1 | * | * | 0.1 | * | * | * | 2.1 | 0.1 | – |
| **40 or more** | 1.1 | 0.2 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | * | * | * | 0.1 | * | – | * | 1.6 | 0.1 | 0.2 |

NOTE: * indicates less than .05 percent. – indicates no cases in category.

[a] Unadjusted for known underreporting of certain drugs. See text for details.

[b] Cocaine and crack data based on six questionnaire forms, other cocaine based on four questionnaire forms.

[c] Based on the data from the revised question, which attempts to exclude the inappropriate reporting of non-prescription stimulants.

## TABLE 5

## Frequency of Cigarette Use and Occasions of Heavy Drinking
## Class of 1990

(Entries are percentages)

| | Percent who used |
|---|---|
| *Q. Have you ever smoked cigarettes?* | |
| Never | 35.6 |
| Once or twice | 26.6 |
| Occasionally but not regularly | 15.8 |
| Regularly in the past | 7.0 |
| Regularly now | 15.0 |
| Approx. N = | (15200) |
| *Q. How frequently have you smoked cigarettes during the past 30 days?* | |
| Not at all (includes "never" category from question above) | 70.6 |
| Less than one cigarette per day | 10.3 |
| One to five cigarettes per day | 7.8 |
| About one-half pack per day | 5.9 |
| About one pack per day | 4.2 |
| About one and one-half packs per day | 0.9 |
| Two packs or more per day | 0.3 |
| Approx. N = | (15200) |
| *Q. Think back over the LAST TWO WEEKS. How many times have you had five or more drinks in a row?* | |
| None | 67.8 |
| Once | 11.3 |
| Twice | 8.0 |
| 3 to 5 times | 8.8 |
| 6 to 9 times | 2.4 |
| 10 or more times | 1.6 |
| Approx. N = | (15200) |

FIGURE 3

**Thirty-Day prevalence of Daily Use**
Various Types of Drugs, Class of 1990

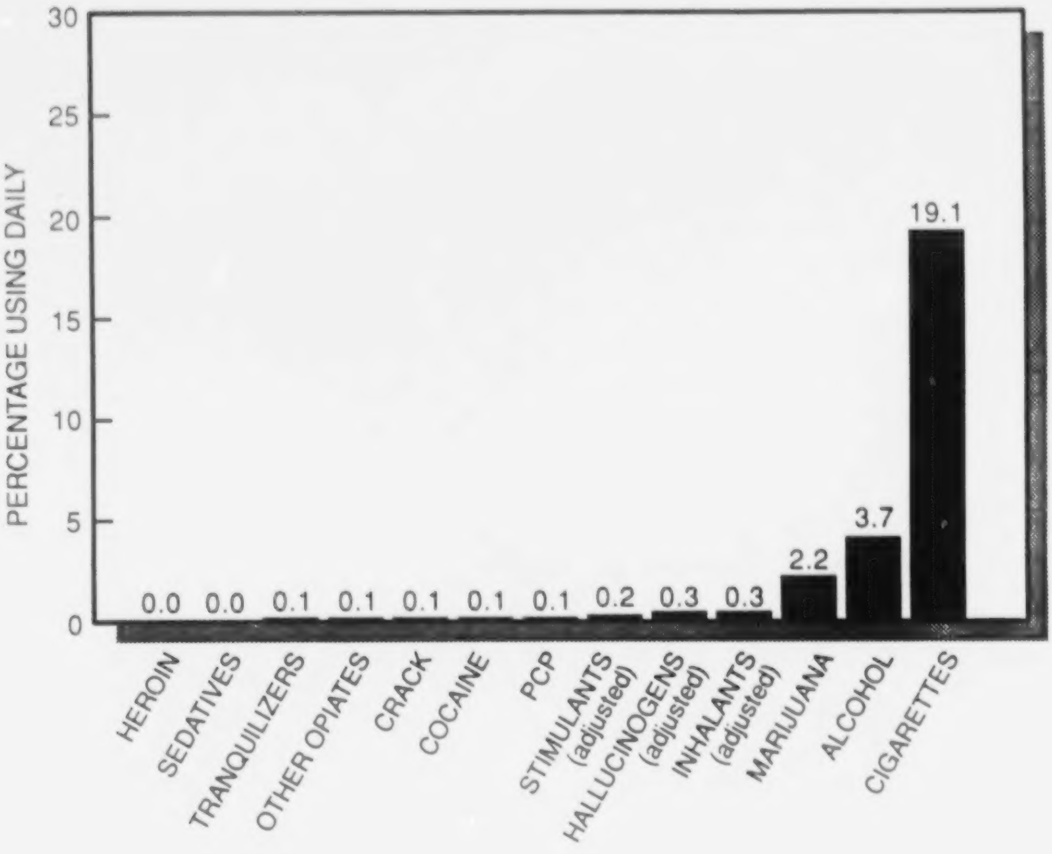
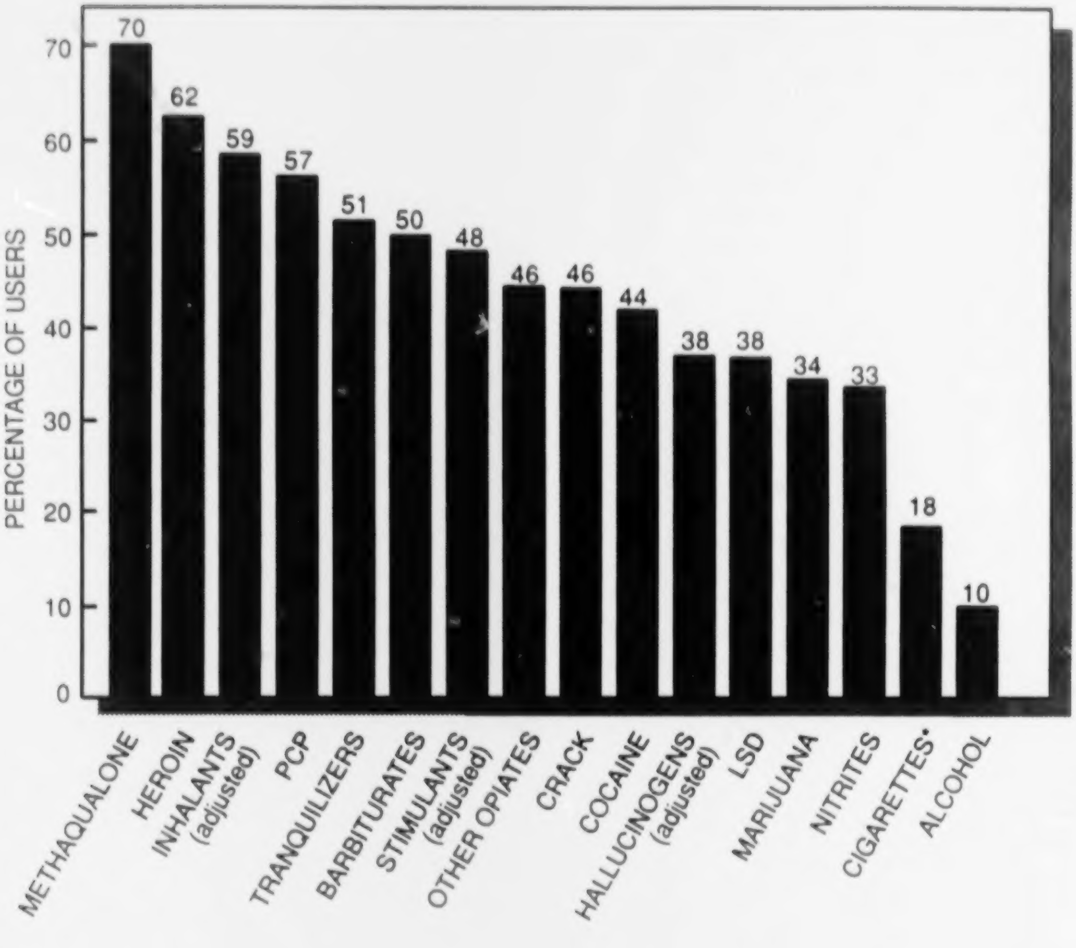


FIGURE 4

**Noncontinuation Rates: Percent of Seniors Who Used Drug Once or More in Lifetime but Did Not Use in Past Year**



*Percent of regular smokers (ever) who did not smoke at all in the last thirty days.

word "noncontinuation" rather than "discontinuation," since the latter might imply discontinuing an established pattern of use. and our current operational definition includes experimental users as well as established users.

- It may be seen in Figure 4 that noncontinuation rates vary widely among the different drugs.
- The highest noncontinuation rates observed are for ***quaaludes*** (70%) and ***heroin*** (62%).
- A high noncontinuation rate by senior year (60%) is found for ***inhalants*** (adjusted), which tends to be used at younger ages.
- ***Marijuana*** has consistently had one of the lowest noncontinuation rates (34%) in senior year of any of the illicit drugs; this occurs because a relatively high proportion of users continue to use at some level over an extended period. (See the chapter on Other Findings for more information on extended use.)
- ***Cocaine*** has a relatively low noncontinuation rate (44%), but this is partly because of its relatively late age of onset. The noncontinuation rate for ***crack*** is 46%. In fact, contrary to the notion that crack is almost instantly addicting, it is noteworthy that of those who have ever used crack (3.5%), only one-fifth (0.7%) are current users and only 0.1% of the total sample are daily users. While there is no question that crack is highly addictive, this evidence suggests that it is not usually addictive on the first use.
- The noncontinuation rate for ***tranquilizers*** stands at 51%. The ***nitrites*** specifically, however, are used somewhat later, as the lower (33%) noncontinuation rate illustrates.
- The remaining ***illicit drugs*** have noncontinuation rates ranging from 38% to 57%.
- By way of contrast with the illicit drugs, noncontinuation rates for the two licit drugs are extremely low. ***Alcohol***, which has been tried by nearly all seniors (90%), is used in senior year by nearly all (90%) of those who have ever tried it.
- For ***cigarettes*** noncontinuation is defined somewhat differently; it is the percentage of those who say they ever smoked "regularly" who also reported not smoking at all during the past month. Hardly any of these regular smokers (only 18%) have ceased active use. (A comparable definition of noncontinuation to that used for other drugs is not possible, since cigarette use in the past year is not asked of respondents.)

## PREVALENCE COMPARISONS FOR IMPORTANT SUBGROUPS

### *Sex Differences*

- In general, higher proportions of males than females are involved in illicit drug use, especially heavy drug use; however, this picture is a somewhat complicated one (see Tables 6 through 9).

- Overall the proportion ever using ***marijuana*** is only slightly higher among males, but daily use of marijuana is three times as frequent among males (3.2% vs. 1.0% for females).

- Males also have considerably higher prevalence rates on most other illicit drugs. The annual prevalence rates (Table 7) tend to be one and one-half to two and one-half times as high among males as among females for ***nitrites***, ***hallucinogens*** (unadjusted and adjusted), the specific drugs ***LSD*** and ***PCP***, ***heroin***, ***cocaine*** and ***crack cocaine***, ***inhalants***, and ***ice***. Males report much higher annual rates of use than females of ***steroids*** (2.6% vs. 0.3%). Compared to females, males report somewhat higher annual rates of use for ***opiates other than heroin***, ***barbiturates***, ***marijuana***, and ***stimulants***. Further, males account for an even greater share of the frequent or heavy users of these various classes of drugs.

- Only in the case of ***tranquilizers*** and ***methaqualone*** do the annual prevalence rates for females match or exceed those for males.

- Despite the fact that nearly all illicit drugs are used more by males than by females, the proportions of both sexes who report using ***some illicit drug other than marijuana*** during the last year are not substantially different (19% for males vs. 16% for females; see Figure 12). Even if amphetamine use is excluded from the comparisons altogether, the proportions of both sexes (15% for males vs. 12% for females) who report using some illicit drug other than marijuana during the year are not greatly different. If one thinks of going beyond marijuana as an important threshold point in the sequence of illicit drug use, then fairly similar proportions of both sexes were willing to cross that threshold at least once during the year. However, on the average the female "users" take fewer types of drugs and use them with less frequency than their male counterparts.

- As noted above, the use of anabolic ***steroids*** tends to be concentrated heavily in the male population, with use among males (2.6% in the past year) nearly ten times as high as among females (0.3%).

- Frequent use of ***alcohol*** tends to be disproportionately concentrated among males. Daily use, for example, is reported by 5.2% of the males vs. only 1.9% of the females. Also, males are

# TABLE 6

## Lifetime Prevalence of Use of Various Types of Drugs by Subgroups, Class of 1990

(Entries are percentages)

| | Marijuana | Inhalants[a,b] | Amyl/Butyl Nitrites[c] | Hallucinogens[b] | LSD | PCP[c] | Cocaine | "Crack" | Other Cocaine[d] | Heroin | Other Opiates | Stimulants[e] (adjusted) | Sedatives[c] | Barbiturates | Methaqualone[c] | Tranquilizers | Alcohol | Cigarettes | Ice[f] | Steroids[c] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **All Seniors** | 40.7 | 18.0 | 2.1 | 9.4 | 8.7 | 2.8 | 9.4 | 3.5 | 8.6 | 1.3 | 8.3 | 17.5 | 7.5 | 6.8 | 2.3 | 7.2 | 89.5 | 64.4 | 2.7 | 2.9 |
| **Sex:** | | | | | | | | | | | | | | | | | | | | |
| **Male** | 43.6 | 21.7 | 2.9 | 11.7 | 10.9 | 3.0 | 11.5 | 4.2 | 10.4 | 1.5 | 9.0 | 17.2 | 8.3 | 7.6 | 2.2 | 7.2 | 90.0 | 64.1 | 3.2 | 5.0 |
| **Female** | 37.3 | 14.1 | 1.1 | 6.8 | 6.3 | 2.5 | 7.2 | 2.6 | 6.6 | 0.9 | 7.5 | 17.8 | 6.6 | 6.0 | 2.0 | 7.1 | 89.1 | 64.4 | 2.1 | 0.5 |
| **College Plans:** | | | | | | | | | | | | | | | | | | | | |
| **None or under 4 yrs** | 48.0 | 21.5 | 3.4 | 11.3 | 10.7 | 4.7 | 13.6 | 5.8 | 11.8 | 1.9 | 10.3 | 24.2 | 10.5 | 9.4 | 2.6 | 8.7 | 90.4 | 72.3 | 3.8 | 3.9 |
| **Complete 4 yrs** | 37.2 | 16.4 | 1.7 | 8.2 | 7.5 | 2.0 | 7.4 | 2.3 | 6.9 | 1.0 | 7.5 | 14.5 | 6.1 | 5.5 | 2.0 | 6.6 | 89.4 | 60.6 | 2.2 | 2.3 |
| **Region:** | | | | | | | | | | | | | | | | | | | | |
| **Northeast** | 44.5 | 16.9 | 1.5 | 10.2 | 9.4 | 3.7 | 10.9 | 3.1 | 9.3 | 1.6 | 7.6 | 14.2 | 6.3 | 5.6 | 3.8 | 6.0 | 94.2 | 66.3 | 2.7 | 2.5 |
| **North Central** | 42.6 | 20.7 | 3.6 | 9.1 | 8.3 | 2.3 | 7.2 | 2.8 | 6.7 | 1.0 | 9.0 | 21.0 | 7.2 | 6.9 | 1.0 | 6.1 | 92.3 | 68.2 | 2.1 | 2.6 |
| **South** | 35.4 | 15.7 | 1.4 | 7.6 | 7.1 | 2.1 | 8.2 | 3.4 | 7.3 | 1.1 | 7.1 | 15.9 | 8.1 | 7.3 | 2.2 | 8.2 | 85.9 | 61.9 | 1.6 | 3.0 |
| **West** | 43.0 | 19.3 | 2.0 | 12.4 | 11.5 | 3.8 | 13.4 | 5.0 | 13.0 | 1.5 | 10.4 | 18.9 | 8.6 | 7.3 | 2.8 | 8.2 | 85.9 | 61.0 | 5.8 | 3.7 |
| **Population Density:** | | | | | | | | | | | | | | | | | | | | |
| **Large SMSA** | 40.8 | 16.1 | 1.8 | 9.0 | 8.2 | 4.1 | 9.7 | 2.9 | 8.8 | 0.8 | 6.8 | 13.5 | 5.1 | 4.8 | 1.6 | 6.2 | 90.7 | 63.7 | 2.3 | 3.0 |
| **Other SMSA** | 42.5 | 18.1 | 1.8 | 10.5 | 9.7 | 2.4 | 9.8 | 3.8 | 8.9 | 1.5 | 8.8 | 18.1 | 7.9 | 7.3 | 2.5 | 8.0 | 90.5 | 63.9 | 3.0 | 2.8 |
| **Non-SMSA** | 36.9 | 19.6 | 3.2 | 7.5 | 7.1 | 2.4 | 8.5 | 3.2 | 7.8 | 1.3 | 8.7 | 20.1 | 9.1 | 7.8 | 2.6 | 6.4 | 86.2 | 66.1 | 2.7 | 3.1 |
| **Parental Education:**[g] | | | | | | | | | | | | | | | | | | | | |
| **1.0-2.0 (Low)** | 38.1 | 15.5 | 1.2 | 6.5 | 6.0 | 2.8 | 9.6 | 3.5 | 7.8 | 1.3 | 6.5 | 16.2 | 5.8 | 5.8 | 0.6 | 6.7 | 84.3 | 65.4 | 2.2 | 2.1 |
| **2.5-3.0** | 42.2 | 18.4 | 2.0 | 8.2 | 7.6 | 3.1 | 10.2 | 4.0 | 9.3 | 1.4 | 8.2 | 20.1 | 8.8 | 7.5 | 2.7 | 7.3 | 90.1 | 65.5 | 3.3 | 3.3 |
| **3.5-4.0** | 42.1 | 18.9 | 2.3 | 10.0 | 9.2 | 3.5 | 9.2 | 3.2 | 8.4 | 1.2 | 8.9 | 18.6 | 7.5 | 7.1 | 2.2 | 7.7 | 90.8 | 64.8 | 2.9 | 4.4 |
| **4.5-5.0** | 40.4 | 18.5 | 2.0 | 10.6 | 9.9 | 1.4 | 8.3 | 2.8 | 7.8 | 0.9 | 8.4 | 15.7 | 7.0 | 6.4 | 2.6 | 6.7 | 90.8 | 63.0 | 2.5 | 1.4 |
| **5.5-6.0 (High)** | 37.9 | 17.4 | 3.2 | 11.6 | 10.7 | 3.0 | 9.2 | 3.3 | 9.1 | 1.6 | 9.4 | 13.6 | 7.5 | 6.5 | 2.2 | 8.1 | 90.8 | 62.0 | 1.8 | 1.5 |

NOTE: See Table 9 for sample sizes.

[a] Data based on five questionnaire forms.

[b] Unadjusted for known underreporting of certain drugs. See text for details.

[c] Data based on one questionnaire form.

[d] Data based on four questionnaire forms.

[e] Based on the data from the revised question, which attempts to exclude the inappropriate reporting of non-prescription stimulants.

[f] Data based on two questionnaire forms.

[g] Parental education is an average score of mother's education and father's education reported on the following scale: (1) Completed grade school or less, (2) Some high school, (3) Completed high school, (4) Some college, (5) Completed college, (6) Graduate or professional school after college. Missing data was allowed on one of the two variables.

more likely than females to drink large quantities of alcohol in a single sitting; 39% of males report taking five or more drinks in a row in the prior two weeks vs. 24% of females.

- In recent years, there were modest sex differences in smoking rates, with more females smoking. Although equivalent proportions of both sexes report any smoking in the past month (29%), slightly more males report smoking at the rate of half-a-pack or more per day (11.6% vs. 10.8% for females).

### *Differences Related to College Plans*

- Overall, seniors who are expecting to complete four years of college (referred to here as the "college-bound") have lower rates of illicit drug use than those not expecting to do so (see Tables 6 through 9 and Figure 13).

- Annual ***marijuana*** use is reported by 25% of the college-bound vs. 31% of the noncollege-bound.

- There is also a difference in the proportion of these two groups using ***any illicit drug(s) other than marijuana*** (adjusted). In 1990, 15% of the college-bound respondents reported any such behavior in the prior year vs. 23% of the noncollege-bound.

- For all of the specific illicit drugs except ice and heroin, current 30-day prevalence is higher—sometimes substantially higher—among the noncollege-bound, as Table 8 illustrates. In fact, current (30-day) prevalence is roughly one and one-third to four times as high among the noncollege-bound as among the college-bound for all of the ***illicit drugs***, with the exceptions of ***hallucinogens, heroin***, and ***ice***.

- ***Frequent*** use of many of these illicit drugs shows even larger contrasts related to college plans (see Table 9). ***Daily marijuana*** use, for example, is more than twice as high among those not planning four years of college (3.5%) as among the college-bound (1.5%).

- Frequent ***alcohol*** use is also more prevalent among the noncollege-bound. For example, drinking on a daily basis is reported by 4.9% of the noncollege-bound vs. 3.0% of the college-bound. Instances of heavy drinking are also related to college plans: 30% of the college-bound report having five or more drinks in a row at least once during the preceding two weeks, vs. 36% of the noncollege-bound. Drinking that heavily on six or more occasions in the last two weeks is reported by 3.5% of the college-bound vs. 5.0% of the noncollege-bound. On the other hand, there are practically no differences between these groups in lifetime, annual, or monthly prevalence of alcohol use. So it is not so much drinking, but rather frequent and heavy drinking, which differentiates these two groups.

## TABLE 7

## Annual Prevalence of Use of Various Types of Drugs by Subgroups, Class of 1990

(Entries are percentages)

| | Marijuana | Inhalants[a,b] | Amyl/Butyl Nitrites[c] | Hallucinogens[b] | LSD | PCP[c] | Cocaine | "Crack" | Other Cocaine[d] | Heroin | Other Opiates | Stimulants[e] (adjusted) | Sedatives[c] | Barbiturates | Methaqualone[c] | Tranquilizers | Alcohol | Cigarettes[h] | Ice[f] | Steroids[c] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **All Seniors** | 27.0 | 6.9 | 1.4 | 5.9 | 5.4 | 1.2 | 5.3 | 1.9 | 4.6 | 0.5 | 4.5 | 9.1 | 3.6 | 3.4 | 0.7 | 3.5 | 80.6 | – | 1.3 | 1.7 |
| **Sex:** | | | | | | | | | | | | | | | | | | | | |
| **Male** | 29.4 | 8.8 | 1.9 | 7.7 | 7.1 | 1.6 | 6.6 | 2.3 | 5.8 | 0.6 | 5.0 | 9.4 | 3.9 | 3.8 | 0.4 | 3.5 | 81.9 | – | 1.5 | 2.6 |
| **Female** | 24.2 | 4.9 | 0.7 | 3.8 | 3.6 | 0.8 | 3.8 | 1.4 | 3.2 | 0.3 | 3.9 | 8.6 | 3.1 | 3.0 | 0.6 | 3.5 | 79.4 | – | 1.0 | 0.3 |
| **College Plans:** | | | | | | | | | | | | | | | | | | | | |
| **None or under 4 yrs** | 31.1 | 7.8 | 1.9 | 6.6 | 6.2 | 1.6 | 7.8 | 3.5 | 6.3 | 0.6 | 5.7 | 12.6 | 4.9 | 4.7 | 0.7 | 4.3 | 81.2 | – | 1.4 | 2.2 |
| **Complete 4 yrs** | 24.7 | 6.4 | 1.2 | 5.3 | 4.8 | 1.1 | 4.1 | 1.2 | 3.7 | 0.4 | 4.0 | 7.4 | 3.0 | 2.8 | 0.5 | 3.2 | 80.5 | – | 1.2 | 1.3 |
| **Region:** | | | | | | | | | | | | | | | | | | | | |
| **Northeast** | 32.2 | 7.4 | 0.9 | 6.6 | 5.9 | 1.9 | 6.5 | 2.0 | 5.6 | 0.8 | 4.1 | 6.3 | 3.2 | 2.9 | 1.5 | 2.9 | 88.9 | – | 1.6 | 1.3 |
| **North Central** | 28.7 | 8.0 | 2.1 | 5.7 | 5.3 | 1.2 | 4.1 | 1.6 | 3.7 | 0.3 | 4.6 | 10.7 | 3.7 | 3.5 | 0.2 | 2.9 | 84.7 | – | 1.1 | 1.3 |
| **South** | 21.4 | 6.4 | 1.1 | 5.0 | 4.7 | 1.0 | 4.8 | 1.8 | 4.1 | 0.5 | 4.1 | 8.9 | 4.2 | 4.0 | 0.6 | 4.3 | 74.4 | – | 0.5 | 2.2 |
| **West** | 28.3 | 5.7 | 1.0 | 6.9 | 6.4 | 1.0 | 6.6 | 2.7 | 6.1 | 0.3 | 5.3 | 10.2 | 2.9 | 2.9 | 0.3 | 3.9 | 75.8 | – | 2.5 | 1.7 |
| **Population Density:** | | | | | | | | | | | | | | | | | | | | |
| **Large SMSA** | 27.7 | 6.7 | 1.4 | 5.7 | 5.2 | 1.3 | 5.6 | 1.6 | 5.0 | 0.4 | 3.8 | 6.5 | 2.8 | 2.6 | 0.8 | 3.6 | 82.6 | – | 1.2 | 1.3 |
| **Other SMSA** | 28.3 | 6.8 | 1.2 | 6.6 | 6.1 | 1.2 | 5.4 | 2.0 | 4.7 | 0.5 | 4.6 | 9.6 | 3.9 | 3.6 | 0.8 | 3.7 | 82.0 | – | 1.3 | 1.5 |
| **Non-SMSA** | 23.5 | 7.4 | 1.6 | 4.5 | 4.2 | 1.3 | 4.8 | 2.0 | 4.1 | 0.5 | 4.8 | 10.6 | 3.9 | 3.9 | 0.1 | 3.3 | 75.7 | – | 1.2 | 2.4 |
| **Parental Education:[g]** | | | | | | | | | | | | | | | | | | | | |
| **1.0-2.0 (Low)** | 21.0 | 5.0 | 0.7 | 3.8 | 3.4 | 1.2 | 4.7 | 2.2 | 3.4 | 0.8 | 3.8 | 7.6 | 3.1 | 3.1 | 0.6 | 3.4 | 72.4 | – | 1.0 | 1.1 |
| **2.5-3.0** | 26.9 | 6.9 | 1.4 | 4.6 | 4.4 | 1.0 | 5.6 | 2.2 | 5.0 | 0.4 | 4.1 | 9.7 | 3.8 | 3.7 | 0.4 | 3.2 | 80.9 | – | 1.3 | 2.0 |
| **3.5-4.0** | 27.6 | 7.2 | 1.0 | 6.5 | 6.0 | 1.9 | 5.6 | 1.8 | 4.7 | 0.4 | 4.6 | 10.6 | 4.0 | 3.9 | 0.7 | 4.4 | 82.5 | – | 1.4 | 2.3 |
| **4.5-5.0** | 28.5 | 7.4 | 1.4 | 6.8 | 6.2 | 0.7 | 4.4 | 1.1 | 4.1 | 0.4 | 4.7 | 8.1 | 3.5 | 3.1 | 0.9 | 3.1 | 83.0 | – | 1.2 | 1.1 |
| **5.5-6.0 (High)** | 29.4 | 7.6 | 2.8 | 8.2 | 7.4 | 1.2 | 5.5 | 1.8 | 5.4 | 0.5 | 5.7 | 7.3 | 3.1 | 2.9 | 0.6 | 4.0 | 82.6 | – | 1.1 | 1.0 |

NOTE: See Table 9 for sample sizes.

[a] Data based on five questionnaire forms.

[b] Unadjusted for known underreporting of certain drugs. See text for details.

[c] Data based on one questionnaire form.

[d] Data based on four questionnaire forms.

[e] Based on the data from the revised question, which attempts to exclude the inappropriate reporting of non prescription stimulants.

[f] Data based on two questionnaire forms.

[g] Parental education is an average score of mother's education and father's education reported on the following scale: (1) Completed grade school or less, (2) Some high school, (3) Completed high school, (4) Some college, (5) Completed college, (6) Graduate or professional school after college. Missing data was allowed on one of the two variables.

[h] Annual prevalence is not available.

- For annual steroid use there is an appreciable difference between the noncollege-bound (2.2% annual prevalence) and the college-bound (1.3%).

- By far the largest difference in substance use between the college and noncollege-bound involves ***cigarette*** smoking.. There is a dramatic difference here, with 7.5% of the college-bound seniors smoking a half-a-pack or more daily as compared with 19.2% of the noncollege-bound seniors.

### *Regional Differences*

- There are some fair-sized regional differences in rates of ***illicit drug use*** among high school seniors. (See Figure 5 for a ***regional division*** map of the states included in the four regions of the country.) The highest rate (adjusted) is in the Northeast, where 36% say they have used an illicit drug in the past year, followed closely by the North Central and West at 34%. The South is the lowest, with 28% having used any illicit drug during the year (see Figure 14).

- There are modest regional variations in terms of the percentage using some ***illicit drug other than marijuana*** (adjusted) in the past year. The West leads all regions for this measure (20%); the North Central is next at 18%, followed by the Northeast and the South at 17%.

- The West has tended to rank relatively high in the use of some ***illicit drug other than marijuana***, due in part to a high level of ***cocaine*** use. In fact, in the past, the regional differences in cocaine use have been the largest observed. Currently, annual prevalence of cocaine is 6.6% in the West and 6.5% in the Northeast; the North Central and South are lower, at 4.1% and 4.8%, respectively. The North Central ranks relatively high on use of ***illicit drugs other than marijuana*** due to a high level of use of ***inhalants, nitrites***, and ***stimulants***.

- Regional differences in ***crack*** use follow slightly different patterns than those for total cocaine use; annual prevalence is highest in the West (2.7%) and somewhat lower in the Northeast (2.0%) and lowest in the South (1.8%) and North Central (1.6%).

- There is a large regional difference in the use of ***ice***. The highest rate is in the West at 2.5% annual prevalence followed by the Northeast and North Central at 1.6% and 1.1%, respectively. The South is the lowest at 0.5% annual prevalence.

- Other specific illicit substances vary in the extent to which they show regional variation, as Table 7 illustrates for the annual prevalence measure.

## TABLE 8

### Thirty-Day Prevalence of Use of Various Types of Drugs by Subgroups, Class of 1990

(Entries are percentages)

| | Marijuana | Inhalants[a,b] | Amyl/Butyl Nitrites[c] | Hallucinogens[b] | LSD | PCP[c] | Cocaine | 'Crack' | Other Cocaine[d] | Heroin | Other Opiates | Stimulants[e] (adjusted) | Sedatives[c] | Barbiturates | Methaqualone[c] | Tranquilizers | Alcohol | Cigarettes | Ice[f] | Steroids[c] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **All Seniors** | 14.0 | 2.7 | 0.6 | 2.2 | 1.9 | 0.4 | 1.9 | 0.7 | 1.7 | 0.2 | 1.5 | 3.7 | 1.4 | 1.3 | 0.2 | 1.2 | 57.1 | 29.4 | 0.6 | 1.0 |
| **Sex:** | | | | | | | | | | | | | | | | | | | | |
| **Male** | 16.1 | 3.5 | 0.8 | 3.2 | 2.7 | 0.5 | 2.3 | 0.9 | 2.2 | 0.2 | 1.6 | 3.7 | 1.4 | 1.4 | 0.0 | 1.2 | 61.3 | 29.1 | 0.6 | 1.7 |
| **Female** | 11.5 | 2.0 | 0.3 | 1.0 | 0.9 | 0.1 | 1.3 | 0.5 | 1.1 | 0.2 | 1.4 | 3.6 | 1.2 | 1.2 | 0.2 | 1.2 | 52.3 | 29.2 | 0.5 | 0.1 |
| **College Plans:** | | | | | | | | | | | | | | | | | | | | |
| **None or under 4 yrs** | 17.6 | 3.3 | 0.7 | 2.3 | 2.1 | 0.5 | 2.6 | 1.3 | 2.2 | 0.2 | 1.9 | 5.2 | 2.2 | 2.0 | 0.4 | 1.6 | 58.7 | 37.5 | 0.6 | 1.8 |
| **Complete 4 yrs** | 11.9 | 2.4 | 0.5 | 2.0 | 1.6 | 0.3 | 1.4 | 0.4 | 1.3 | 0.2 | 1.3 | 2.8 | 1.0 | 1.0 | 0.1 | 0.9 | 56.4 | 25.4 | 0.6 | 0.6 |
| **Region:** | | | | | | | | | | | | | | | | | | | | |
| **Northeast** | 17.6 | 2.7 | 0.5 | 2.5 | 1.9 | 0.0 | 2.4 | 0.8 | 2.5 | 0.3 | 1.1 | 2.6 | 1.2 | 1.2 | 0.6 | 1.0 | 65.3 | 31.9 | 0.7 | 1.0 |
| **North Central** | 13.7 | 3.3 | 0.4 | 1.8 | 1.6 | 0.6 | 1.1 | 0.3 | 0.9 | 0.1 | 1.7 | 4.0 | 1.3 | 1.3 | 0.0 | 1.0 | 61.5 | 34.0 | 0.6 | 0.9 |
| **South** | 11.5 | 2.6 | 0.7 | 2.2 | 2.0 | 0.4 | 1.8 | 0.9 | 1.6 | 0.2 | 1.3 | 4.0 | 1.8 | 1.6 | 0.2 | 1.5 | 51.0 | 26.1 | 0.3 | 1.4 |
| **West** | 14.7 | 2.1 | 0.7 | 2.4 | 2.1 | 0.3 | 2.6 | 1.1 | 2.3 | 0.1 | 2.0 | 4.0 | 1.1 | 1.1 | 0.1 | 1.2 | 51.6 | 25.1 | 0.9 | 0.5 |
| **Population Density:** | | | | | | | | | | | | | | | | | | | | |
| **Large SMSA** | 14.1 | 2.9 | 0.4 | 2.3 | 2.0 | 0.3 | 2.4 | 0.8 | 2.2 | 0.2 | 1.3 | 2.5 | 1.2 | 1.1 | 0.1 | 1.1 | 59.2 | 27.9 | 0.3 | 0.7 |
| **Other SMSA** | 14.6 | 2.5 | 0.8 | 2.4 | 2.0 | 0.5 | 1.9 | 0.8 | 1.7 | 0.2 | 1.5 | 3.9 | 1.5 | 1.4 | 0.4 | 1.2 | 57.4 | 29.6 | 0.6 | 0.9 |
| **Non-SMSA** | 12.6 | 3.1 | 0.4 | 1.7 | 1.3 | 0.0 | 1.3 | 0.6 | 1.3 | 0.1 | 1.5 | 4.4 | 1.5 | 1.5 | 0.0 | 1.2 | 54.4 | 30.4 | 0.9 | 1.5 |
| **Parental Education[g]** | | | | | | | | | | | | | | | | | | | | |
| **1.0-2.0 (Low)** | 11.4 | 2.5 | 0.3 | 1.5 | 1.4 | 0.9 | 2.0 | 1.1 | 1.6 | 0.5 | 1.5 | 3.4 | 1.3 | 1.3 | 0.0 | 0.9 | 47.2 | 26.3 | 0.8 | 0.6 |
| **2.5-3.0** | 14.3 | 2.8 | 0.6 | 1.7 | 1.6 | 0.3 | 1.8 | 0.7 | 1.7 | 0.2 | 1.2 | 4.3 | 1.4 | 1.4 | 0.0 | 1.2 | 57.2 | 30.8 | 0.7 | 1.6 |
| **3.5-4.0** | 13.5 | 2.8 | 0.3 | 2.0 | 1.7 | 0.6 | 2.0 | 0.6 | 1.7 | 0.0 | 1.5 | 4.3 | 1.5 | 1.4 | 0.2 | 1.4 | 57.7 | 29.3 | 0.5 | 1.6 |
| **4.5-5.0** | 15.0 | 2.7 | 0.4 | 2.9 | 2.4 | 0.1 | 1.2 | 0.4 | 1.2 | 0.1 | 1.4 | 2.8 | 1.3 | 1.3 | 0.4 | 0.8 | 60.8 | 29.1 | 0.5 | 0.0 |
| **5.5-6.0 (High)** | 15.0 | 2.7 | 1.4 | 3.1 | 2.6 | 0.0 | 2.0 | 1.0 | 2.2 | 0.3 | 2.4 | 2.5 | 1.3 | 1.1 | 0.2 | 1.7 | 60.8 | 28.6 | 0.4 | 0.5 |

NOTE: See Table 9 for sample sizes.

[a] Data based on five questionnaire forms.

[b] Unadjusted for known underreporting of certain drugs. See text for details.

[c] Data based on one questionnaire form.

[d] Data based on four questionnaire forms.

[e] Based on the data from the revised question, which attempts to exclude the inappropriate reporting of non-prescription stimulants.

[f] Data based on two questionnaire forms.

[g] Parental education is an average score of mother's education and father's education reported on the following scale: (1) Completed grade school or less, (2) Some high school, (3) Completed high school, (4) Some college, (5) Completed college, (6) Graduate or professional school after college. Missing data was allowed on one of the two variables.

Use is highest in the Northeast for ***marijuana***, ***PCP***, ***heroin***, and ***methaqualone***. The West ranks first among the regions in use of ***hallucinogens***, ***LSD*** specifically, ***crack***, ***other cocaine***, ***ice***, and ***other opiates***. However, despite its high rate of use of the above drugs, the West shows the lowest levels of use for ***inhalants***, ***PCP***, ***sedatives***, ***barbiturates***, and ***heroin***. The South shows the highest rate of use for ***barbiturates***, ***tranquilizers***, ***sedatives*** and ***steroids***, even though it ranks last for ***marijuana***, ***hallucinogens*** (unadjusted), ***LSD***, ***opiates other than heroin***, ***PCP***, and ***ice***. Use is highest in the North Central for ***inhalants***, ***nitrites***, and ***stimulants***, and lowest in the North Central for ***cocaine***, ***crack***, ***heroin***, ***quaaludes***, ***tranquilizers***.

- There are some regional differences for ***steroid*** use; the South is highest at 2.2% annual prevalence, the West next at 1.7%, and the North Central and Northeast both at 1.3%.

- ***Alcohol*** use—in particular, the rate of occasional heavy drinking—tends to be somewhat lower in the South and West than it is in the Northeast and North Central.

- A similar, though much larger, regional difference occurs for regular ***cigarette*** smoking. Smoking half-a-pack or more a day occurs most often in the Northeast and North Central (14% of seniors), and less often in the South (9%) and the West (8%).

### *Differences Related to Population Density*

- Three levels of population density (or urbanicity) have been distinguished for analytical purposes: (1) large SMSA's, which are the sixteen largest Standard Metropolitan Statistical Areas in the 1980 Census; (2) other SMSA's, which are the remaining Standard Metropolitan Statistical Areas; and (3) non-SMSA's, which are the sampling areas not designated as metropolitan by the Census.

- In general, the differences in the use of most illicit drugs across these different sizes of community are small at the present time, reflecting how widely illicit drug use has diffused through the population.

- Overall ***illicit drug use*** is about the same across community size; the largest metropolitan areas show 33% annual prevalence, the other metropolitan areas 34%, and the nonmetropolitan areas 30% annual prevalence (see Figure 16).

- For ***marijuana***, use is also a little lower in the nonurban areas (24%) than in either of the other strata (both 28% annual prevalence).

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# TABLE 9

## Thirty-Day Prevalence of Daily Use of Marijuana, Alcohol, and Cigarettes by Subgroups, Class of 1990

| | | Percent who used daily in last thirty days | | | | |
|---|---|---|---|---|---|---|
| | | | Alcohol | | Cigarettes | |
| | N (Approx.) | Marijuana | Daily | 5+ drinks[b] | One or more | Half-pack or more |
| All Seniors | 15200 | 2.2 | 3.7 | 32.2 | 19.1 | 11.3 |
| Sex: | | | | | | |
| Male | 7700 | 3.2 | 5.2 | 39.1 | 18.6 | 11.6 |
| Female | 7100 | 1.0 | 1.9 | 24.4 | 19.3 | 10.8 |
| College Plans: | | | | | | |
| None or under 4 yrs | 4200 | 3.5 | 4.9 | 35.8 | 28.3 | 19.2 |
| Complete 4 yrs | 10100 | 1.5 | 3.0 | 30.3 | 14.7 | 7.5 |
| Region: | | | | | | |
| Northeast | 3300 | 2.7 | 4.5 | 37.2 | 22.8 | 13.8 |
| North Central | 4200 | 2.3 | 3.9 | 37.9 | 22.2 | 13.7 |
| South | 5000 | 1.7 | 3.4 | 27.2 | 16.5 | 9.4 |
| West | 2700 | 2.4 | 2.9 | 26.3 | 14.8 | 8.3 |
| Population Density: | | | | | | |
| Large SMSA | 3800 | 2.4 | 4.7 | 34.5 | 19.0 | 11.2 |
| Other SMSA | 7700 | 2.0 | 3.2 | 31.8 | 19.0 | 11.0 |
| Non-SMSA | 3700 | 2.4 | 3.7 | 30.6 | 19.5 | 12.1 |
| Parental Education[a] | | | | | | |
| 1.0–2.0 (Low) | 1600 | 2.0 | 3.1 | 25.3 | 16.7 | 10.2 |
| 2.5–3.0 | 4300 | 2.3 | 3.9 | 32.7 | 21.0 | 13.4 |
| 3.5–4.0 | 4100 | 1.9 | 3.4 | 32.0 | 19.3 | 11.6 |
| 4.5–5.0 | 3100 | 2.1 | 3.4 | 34.5 | 18.3 | 10.2 |
| 5.5–6.0 (High) | 1600 | 2.5 | 4.2 | 34.1 | 16.5 | 7.9 |

---

[a] Parental education is an average score of mother's education and father's education reported on the following scale: (1) Completed grade school or less, (2) Some high school, (3) Completed high school, (4) Some college, (5) Completed college, (6) Graduate or professional school after college. Missing data was allowed on one of the two variables.

[b] This measure refers to use of five or more drinks in a row in the past two weeks.

- On the other hand, for the use of ***illicit drugs other than marijuana*** the lowest rate occurs in the large cities, 16% annual prevalence (adjusted); the other cities (19%) and the nonmetropolitan areas (18%) are roughly equivalent.

- Regarding ***crack*** use, the larger cities have the lowest annual prevalence (1.6%), and the other two strata slightly higher (2.0%). Clearly crack has moved well beyond the confines of a few large cities; indeed, 83% of all schools in the 1990 sample included some reports of lifetime crack use; and since that was based on only seniors who were sampled in each school, it may be a slight underestimate.

- ***PCP*** rates do not vary much by population density, annual prevalence being 1.2% or 1.3% in all three areas.

- There has been some tendency for a few other drugs to be associated positively with urbanicity; however, the relationships have not been strong, nor have they remained consistent from one year to another.

- Two of the newer drugs in the study, ***ice*** and ***steroids***, show an association with urbanicity, as would be expected early in their diffusion phase.

- In recent years there has been a tendency for the use of ***stimulants*** to be lowest in the large metropolitan areas (6.5% in 1990), higher in other cities (9.6% in 1990), and highest in the nonmetropolitan areas (10.6%) (see Table 7).

### *Differences Related to Parental Education*

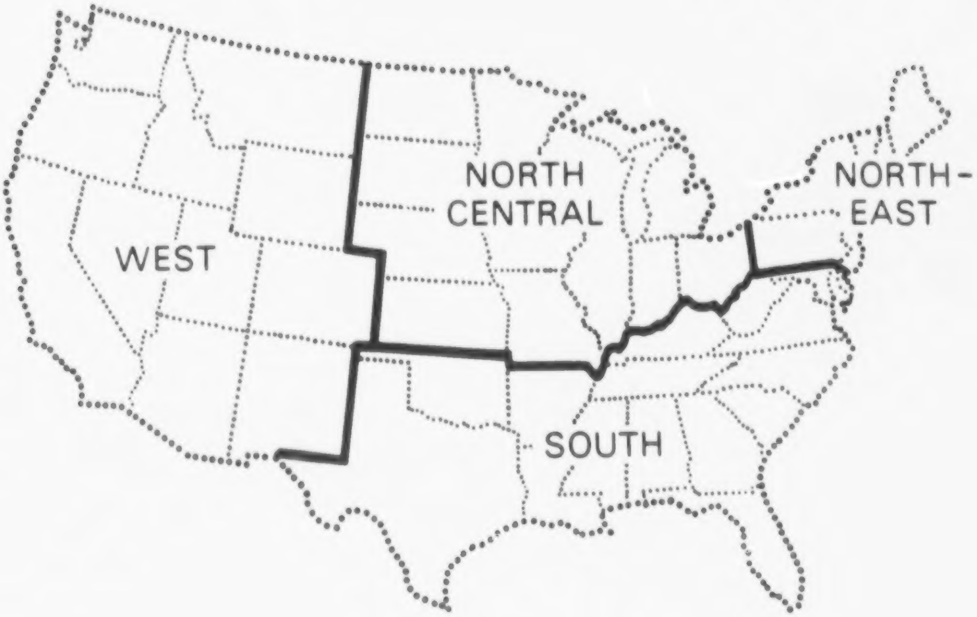
- The best measure of family socioeconomic status available in the study is an index of parental education, which is based on the average of the educational levels reported for both parents by the respondent (or using data for one parent, if data for both are not available). The scale values on the original questions are: 1) completed grade school or less, (2) some high school, (3) completed high school, (4) some college, (5) completed college, and (6) graduate or professional school after college. The average educational level obtained by students' parents has been rising over the years. Tables 6–9 give the distributions for 1990.

- For ***most drugs*** there is rather little association with family socioeconomic status, which speaks to the extent to which illicit drug use has permeated all social levels.

- A few drugs have a slight positive association with socioeconomic status, as Tables 6 through 9 illustrate. These include ***marijuana***, ***LSD***, ***hallucinogens***, ***inhalants***, ***nitrite inhalants*** specifically, and ***opiates other than heroin***.

FIGURE 5

**States Included in the Four Regions of the Country**


WEST
NORTH CENTRAL
NORTH-EAST
SOUTH

These are the four major regions of the country as defined by the U.S. Bureau of the Census.

- Conversely, thirty-day prevalence of the use of ***PCP***, ***heroin***, and ***ice*** appears to be more concentrated at the low end of the socioeconomic scale.

- ***Crack*** cocaine shows rather little association with socioeconomic status.

- The use of ***stimulants*** and ***sedatives*** appears to be highest in the middle socioeconomic strata.

- Current ***cigarette smoking*** (any use in the prior 30 days) bears a curvilinear association with socioeconomic status, with the highest rate of smoking in the next to lowest category. This relationship is even more accentuated at the half-pack a day level.

- For ***alcohol*** there is a slight positive association between socioeconomic status and 30-day prevalence but practically none for ***daily drinking*** or occasional ***heavy drinking***.

## Chapter 5

# TRENDS IN DRUG USE AMONG HIGH SCHOOL SENIORS

This section summarizes trends in drug use, comparing the sixteen graduating classes of 1975 through 1990. As in the previous section, the outcomes to be discussed include measures of lifetime use, use during the past year, use during the past month, and daily use. In addition, trends are compared among the key demographic subgroups discussed earlier; and trends in noncontinuation rates are also examined.

## TRENDS IN PREVALENCE 1975-1990: ALL SENIORS

- The years 1978 and 1979 marked the crest of a long and dramatic rise in ***marijuana*** use among American high school students. As Tables 10 through 13 illustrate, annual and 30-day prevalence of marijuana use leveled between 1978 and 1979, following a steady rise in the preceding years. In 1980 both statistics dropped for the first time and continued to decline every year, except in 1985 when there was a brief pause. In 1990 both declined significantly, and they now stand at 23-24% below their all-time highs. Lifetime prevalence began to drop in 1981, though more gradually. It decreased significantly in 1990, but still is only 20% below its all time high (i.e., 40% vs. 60%). As we will discuss in Chapter 8, there have been some significant changes in the attitudes and beliefs that young people hold in relation to marijuana and which appear to account for much of this decline in use.

- Of greater importance is the even sharper downward trend which has been continuing to occur for ***daily marijuana use***. Between 1975 and 1978 there was an almost two-fold increase in daily use. The proportion reporting daily use in the class of 1975 (6.0%) came as a surprise to many; and then that proportion rose rapidly, so that by 1978 one in every nine high school seniors (10.7%) indicated that he or she used the drug on a daily or nearly daily basis (defined as use on 20 or more occasions in the last 30 days). In 1979 we reported that this rapid and troublesome increase had come to a halt, with a 0.4% drop occurring that year. By 1990 the daily usage rate has dropped to 2.2%, well below the 6% level we first observed in 1975. As later sections of this report document, much of this dramatic reversal appears to be due to a continuing increase in concerns about possible adverse effects from regular use, and a growing perception that peers would disapprove of regular marijuana use.

## TABLE 10
## Trends in Lifetime Prevalence of Various Types of Drugs

| | Percent ever used | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Class of 1975 | Class of 1976 | Class of 1977 | Class of 1978 | Class of 1979 | Class of 1980 | Class of 1981 | Class of 1982 | Class of 1983 | Class of 1984 | Class of 1985 | Class of 1986 | Class of 1987 | Class of 1988 | Class of 1989 | Class of 1990 | '89 - '90 change |
| Approx. N = | 9400 | 15400 | 17100 | 17800 | 15500 | 15900 | 17500 | 17700 | 16300 | 15900 | 16000 | 15200 | 16300 | 16300 | 16700 | 15200 | |
| *Any Illicit Drug Use*[a] | *55.2* | *58.3* | *61.6* | *64.1* | *65.1* | *65.4* | *65.6* | *65.8* | *64.1* | | | | | | | | |
| *Adjusted Version*[b] | — | — | — | — | — | — | — | *64.4* | *62.9* | *61.6* | *60.6* | *57.6* | *56.6* | *53.9* | *50.9* | *47.9* | *−3.0ss* |
| *Any Illicit Drug Other Than Marijuana*[c] | *36.2* | *35.4* | *35.8* | *36.5* | *37.4* | *38.7* | *42.8* | *45.0* | *44.4* | | | | | | | | |
| *Adjusted Version*[b] | — | — | — | — | — | — | — | *41.1* | *40.4* | *40.3* | *39.7* | *37.7* | *35.8* | *32.5* | *31.4* | *29.4* | *−2.0s* |
| Marijuana/Hashish | 47.3 | 52.8 | 56.4 | 59.2 | 60.4 | 60.3 | 59.5 | 58.7 | 57.0 | 54.9 | 54.2 | 50.9 | 50.2 | 47.2 | 43.7 | 40.7 | −3.0ss |
| Inhalants[d] | NA | 10.3 | 11.1 | 12.0 | 12.7 | 11.9 | 12.3 | 12.8 | 13.6 | 14.4 | 15.4 | 15.9 | 17.0 | 16.7 | 17.6 | 18.0 | +0.4 |
| *Inhalants Adjusted*[e] | *NA* | *NA* | *NA* | *NA* | *18.2* | *17.3* | *17.2* | *17.7* | *18.2* | *18.0* | *18.1* | *20.1* | *18.6* | *17.5* | *18.6* | *18.5* | *−0.1* |
| Amyl & Butyl Nitrites[f,g] | NA | NA | NA | NA | 11.1 | 11.1 | 10.1 | 9.8 | 8.4 | 8.1 | 7.9 | 8.6 | 4.7 | 3.2 | 3.3 | 2.1 | −1.2s |
| Hallucinogens | 16.3 | 15.1 | 13.9 | 14.3 | 14.1 | 13.3 | 13.3 | 12.5 | 11.9 | 10.7 | 10.3 | 9.7 | 10.3 | 8.9 | 9.4 | 9.4 | 0.0 |
| *Hallucinogens Adjusted*[h] | *NA* | *NA* | *NA* | *NA* | *17.7* | *15.6* | *15.3* | *14.3* | *13.6* | *12.3* | *12.1* | *11.9* | *10.6* | *9.2* | *9.9* | *9.7* | *−0.2* |
| LSD | 11.3 | 11.0 | 9.8 | 9.7 | 9.5 | 9.3 | 9.8 | 9.6 | 8.9 | 8.0 | 7.5 | 7.2 | 8.4 | 7.7 | 8.3 | 8.7 | +0.4 |
| PCP[f,g] | NA | NA | NA | NA | 12.8 | 9.6 | 7.8 | 6.0 | 5.6 | 5.0 | 4.9 | 4.8 | 3.0 | 2.9 | 3.9 | 2.8 | −1.1 |
| Cocaine | 9.0 | 9.7 | 10.8 | 12.9 | 15.4 | 15.7 | 16.5 | 16.0 | 16.2 | 16.1 | 17.3 | 16.9 | 15.2 | 12.1 | 10.3 | 9.4 | −0.9 |
| "Crack"[i] | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 5.4 | 4.8 | 4.7 | 3.5 | −1.2ss |
| Other cocaine[j] | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 14.0 | 12.1 | 8.5 | 8.6 | +0.1 |
| Heroin | 2.2 | 1.8 | 1.8 | 1.6 | 1.1 | 1.1 | 1.1 | 1.2 | 1.2 | 1.3 | 1.2 | 1.1 | 1.2 | 1.1 | 1.3 | 1.3 | 0.0 |
| Other opiates[k] | 9.0 | 9.6 | 10.3 | 9.9 | 10.1 | 9.8 | 10.1 | 9.6 | 9.4 | 9.7 | 10.2 | 9.0 | 9.2 | 8.6 | 8.3 | 8.3 | 0.0 |
| Stimulants[k] | 22.3 | 22.6 | 23.0 | 22.9 | 24.2 | 26.4 | 32.2 | 35.6 | 35.4 | NA | NA | NA | NA | NA | NA | NA | NA |
| *Stimulants Adjusted*[b,k] | *NA* | *NA* | *NA* | *NA* | *NA* | *NA* | *NA* | *27.9* | *26.9* | *27.9* | *26.2* | *23.4* | *21.6* | *19.8* | *19.1* | *17.5* | *−1.6s* |
| Crystal Methamphetamine[l] | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 2.7 | NA |
| Sedatives[k,m] | 18.2 | 17.7 | 17.4 | 16.0 | 14.6 | 14.9 | 16.0 | 15.2 | 14.4 | 13.3 | 11.8 | 10.4 | 8.7 | 7.8 | 7.4 | 7.5 | +0.1 |
| Barbiturates[k] | 16.9 | 16.2 | 15.6 | 13.7 | 11.8 | 11.0 | 11.3 | 10.3 | 9.9 | 9.9 | 9.2 | 8.4 | 7.4 | 6.7 | 6.5 | 6.8 | +0.3 |
| Methaqualone[k,m] | 8.1 | 7.8 | 8.5 | 7.9 | 8.3 | 9.5 | 10.6 | 10.7 | 10.1 | 8.3 | 6.7 | 5.2 | 4.0 | 3.3 | 2.7 | 2.3 | −0.4 |
| Tranquilizers[k] | 17.0 | 16.8 | 18.0 | 17.0 | 16.3 | 15.2 | 14.7 | 14.0 | 13.3 | 12.4 | 11.9 | 10.9 | 10.9 | 9.4 | 7.6 | 7.2 | −0.4 |
| Alcohol | 90.4 | 91.9 | 92.5 | 93.1 | 93.0 | 93.2 | 92.6 | 92.8 | 92.6 | 92.6 | 92.2 | 91.3 | 92.2 | 92.0 | 90.7 | 89.5 | −1.2 |
| Cigarettes | 73.6 | 75.4 | 75.7 | 75.3 | 74.0 | 71.0 | 71.0 | 70.1 | 70.6 | 69.7 | 68.8 | 67.6 | 67.2 | 66.4 | 65.7 | 64.4 | −1.3 |
| Steroids[f] | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 3.0 | 2.9 | −0.1 |

NOTES: Level of significance of difference between the two most recent classes: s = .05, ss = .01, sss = .001. NA indicates data not available.

[a] Use of "any illicit drugs" includes any use of marijuana, hallucinogens, cocaine, and heroin, or any use of other opiates, stimulants, barbiturates, methaqualone (excluded in 1990), or tranquilizers not under a doctor's orders.

[b] Based on the data from the revised question, which attempts to exclude the inappropriate reporting of non-prescription stimulants.

[c] Use of "other illicit drugs" includes any use of hallucinogens, cocaine, and heroin, or any use of other opiates, stimulants, barbiturates, methaqualone (excluded in 1990), or tranquilizers not under a doctor's orders.

[d] Data based on four questionnaire forms in 1976–1988; N is four-fifths of N indicated. Data based on five questionnaire forms in 1989–1990; N is five sixths of N indicated.

[e] Adjusted for underreporting of amyl and butyl nitrites. See text for details.

[f] Data based on a single questionnaire form; N is one fifth of N indicated in 1979–1988 and one sixth of N indicated in 1989 and 1990.

[g] Question text changed slightly in 1987.

[h] Adjusted for underreporting of PCP. See text for details.

[i] Data based on two questionnaire forms in 1987–1989; N is two fifths of N indicated in 1987–1988 and two sixths of N indicated in 1989. Data based on six questionnaire forms in 1990.

[j] Data based on a single questionnaire form in 1987–1989; N is one fifth of N indicated in 1987–1988 and one sixth of N indicated in 1989. Data based on four questionnaire forms in 1990. N is four-sixths of N indicated.

[k] Only drug use which was not under a doctor's orders is included here.

[l] Data based on two questionnaire forms; N is two-sixths of N indicated.

[m] Data based on five questionnaire forms in 1975–1988, six questionnaire forms in 1989, and one questionnaire form in 1990. N is one sixth of N indicated in 1990.

## TABLE 11
## Trends in Annual Prevalence of Various Types of Drugs

| | Percent who used in last twelve months | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Class of 1975 | Class of 1976 | Class of 1977 | Class of 1978 | Class of 1979 | Class of 1980 | Class of 1981 | Class of 1982 | Class of 1983 | Class of 1984 | Class of 1985 | Class of 1986 | Class of 1987 | Class of 1988 | Class of 1989 | Class of 1990 | '89–'90 change |
| Approx. N = | 9400 | 15400 | 17100 | 17800 | 15500 | 15900 | 17500 | 17700 | 16300 | 15900 | 16000 | 15200 | 16300 | 16300 | 16700 | 15200 | |
| *Any Illicit Drug Use*[a] | *45.0* | *48.1* | *51.1* | *53.8* | *54.2* | *53.1* | *52.1* | *50.8* | *49.1* | — | — | — | — | — | — | — | |
| *Adjusted Version*[b] | — | — | — | — | — | — | — | *49.4* | *47.4* | *45.8* | *46.3* | *44.3* | *41.7* | *38.5* | *35.4* | *32.5* | −2.9ss |
| *Any Illicit Drug Other Than Marijuana*[c] | *26.2* | *25.4* | *26.0* | *27.1* | *28.2* | *30.4* | *34.0* | *33.8* | *32.5* | — | — | — | — | — | — | — | |
| *Adjusted Version*[b] | — | — | — | — | — | — | — | *30.1* | *28.4* | *28.0* | *27.4* | *25.9* | *24.1* | *21.1* | *20.0* | *17.9* | −2.1ss |
| Marijuana/Hashish | 40.0 | 44.5 | 47.6 | 50.2 | 50.8 | 48.8 | 46.1 | 44.3 | 42.3 | 40.0 | 40.6 | 38.8 | 36.3 | 33.1 | 29.6 | 27.0 | −2.6s |
| Inhalants[d] | NA | 3.0 | 3.7 | 4.1 | 5.4 | 4.6 | 4.1 | 4.5 | 4.3 | 5.1 | 5.7 | 6.1 | 6.9 | 6.5 | 5.9 | 6.9 | +1.0s |
| *Inhalants Adjusted*[e] | *NA* | *NA* | *NA* | *NA* | *8.9* | *7.9* | *6.1* | *6.6* | *6.2* | *7.2* | *7.5* | *8.9* | *8.1* | *7.1* | *6.9* | *7.5* | *+0.6* |
| Amyl/Butyl Nitrites[f,g] | NA | NA | NA | NA | 6.5 | 5.7 | 3.7 | 3.6 | 3.6 | 4.0 | 4.0 | 4.7 | 2.6 | 1.7 | 1.7 | 1.4 | −0.3 |
| Hallucinogens | 11.2 | 9.4 | 8.8 | 9.6 | 9.9 | 9.3 | 9.0 | 8.1 | 7.3 | 6.5 | 6.3 | 6.0 | 6.4 | 5.5 | 5.6 | 5.9 | +0.3 |
| *Hallucinogens Adjusted*[h] | *NA* | *NA* | *NA* | *NA* | *11.8* | *10.4* | *10.1* | *9.0* | *8.3* | *7.3* | *7.6* | *7.6* | *6.7* | *5.8* | *6.2* | *6.0* | *−0.2* |
| LSD | 7.2 | 6.4 | 5.5 | 6.3 | 6.6 | 6.5 | 6.5 | 6.1 | 5.4 | 4.7 | 4.4 | 4.5 | 5.2 | 4.8 | 4.9 | 5.4 | +0.5 |
| PCP[f,g] | NA | NA | NA | NA | 7.0 | 4.4 | 3.2 | 2.2 | 2.6 | 2.3 | 2.9 | 2.4 | 1.3 | 1.2 | 2.4 | 1.2 | −1.2ss |
| Cocaine | 5.6 | 6.0 | 7.2 | 9.0 | 12.0 | 12.3 | 12.4 | 11.5 | 11.4 | 11.6 | 13.1 | 12.7 | 10.3 | 7.9 | 6.5 | 5.3 | −1.2ss |
| "Crack"[i] | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 4.1 | 3.9 | 3.1 | 3.1 | 1.9 | −1.2sss |
| Other cocaine[j] | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 9.8 | 7.4 | 5.2 | 4.6 | −0.6 |
| Heroin | 1.0 | 0.8 | 0.8 | 0.8 | 0.5 | 0.5 | 0.5 | 0.6 | 0.6 | 0.5 | 0.6 | 0.5 | 0.5 | 0.5 | 0.6 | 0.5 | −0.1 |
| Other opiates[k] | 5.7 | 5.7 | 6.4 | 6.0 | 6.2 | 6.3 | 5.9 | 5.3 | 5.1 | 5.2 | 5.9 | 5.2 | 5.3 | 4.6 | 4.4 | 4.5 | +0.1 |
| Stimulants[k] | 16.2 | 15.8 | 16.3 | 17.1 | 18.3 | 20.8 | 26.0 | 26.1 | 24.6 | NA | NA | NA | NA | NA | NA | NA | NA |
| *Stimulants Adjusted*[b,k] | *NA* | *NA* | *NA* | *NA* | *NA* | *NA* | *NA* | *20.3* | *17.9* | *17.7* | *15.8* | *13.4* | *12.2* | *10.9* | *10.8* | *9.1* | *−1.7ss* |
| Crystal Methamphetamine[l] | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 1.3 | NA |
| Sedatives[k,m] | 11.7 | 10.7 | 10.8 | 9.9 | 9.9 | 10.3 | 10.5 | 9.1 | 7.9 | 6.6 | 5.8 | 5.2 | 4.1 | 3.7 | 3.7 | 3.6 | −0.1 |
| Barbiturates[k] | 10.7 | 9.6 | 9.3 | 8.1 | 7.5 | 6.8 | 6.6 | 5.5 | 5.2 | 4.9 | 4.6 | 4.2 | 3.6 | 3.2 | 3.3 | 3.4 | +0.1 |
| Methaqualone[k,m] | 5.1 | 4.7 | 5.2 | 4.9 | 5.9 | 7.2 | 7.6 | 6.8 | 5.4 | 3.8 | 2.8 | 2.1 | 1.5 | 1.3 | 1.3 | 0.7 | −0.6s |
| Tranquilizers[k] | 10.6 | 10.3 | 10.8 | 9.9 | 9.6 | 8.7 | 8.0 | 7.0 | 6.9 | 6.1 | 6.1 | 5.8 | 5.5 | 4.8 | 3.8 | 3.5 | −0.3 |
| Alcohol | 84.8 | 85.7 | 87.0 | 87.7 | 88.1 | 87.9 | 87.0 | 86.8 | 87.3 | 86.0 | 85.6 | 84.5 | 85.7 | 85.3 | 82.7 | 80.6 | −2.1s |
| Cigarettes | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| Steroids[f] | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 1.9 | 1.7 | −0.2 |

NOTES: Level of significance of difference between the two most recent classes: s = .05, ss = .01, sss = .001. NA indicates data not available.

[a] Use of "any illicit drugs" includes any use of marijuana, hallucinogens, cocaine, and heroin, or any use of other opiates, stimulants, barbiturates, methaqualone (excluded in 1990), or tranquilizers not under a doctor's orders.

[b] Based on the data from the revised question, which attempts to exclude the inappropriate reporting of non prescription stimulants.

[c] Use of "other illicit drugs" includes any use of hallucinogens, cocaine, and heroin, or any use of other opiates, stimulants, barbiturates, methaqualone (excluded in 1990), or tranquilizers not under a doctor's orders.

[d] Data based on four questionnaire forms in 1976–1988; N is four-fifths of N indicated. Data based on five questionnaire forms in 1989–1990; N is five-sixths of N indicated.

[e] Adjusted for underreporting of amyl and butyl nitrites. See text for details.

[f] Data based on a single questionnaire form; N is one-fifth of N indicated in 1979–1988 and one-sixth of N indicated in 1989 and 1990.

[g] Question text changed slightly in 1987.

[h] Adjusted for underreporting of PCP. See text for details.

[i] Data based on a single questionnaire form in 1986; N is one-fifth of N indicated. Data based on two questionnaire forms in 1987–1989; N is two-fifths of N indicated in 1987–1988 and two-sixths of N indicated in 1989. Data based on six questionnaire forms in 1990.

[j] Data based on a single questionnaire form in 1987–1989; N is one-fifth of N indicated in 1987–1988 and one-sixth of N indicated in 1989. Data based on four questionnaire forms in 1990; N is four-sixths of N indicated.

[k] Only drug use which was not under a doctor's orders is included here.

[l] Data based on two questionnaire forms; N is two-sixths of N indicated.

[m] Data based on five questionnaire forms in 1975–1988, six questionnaire forms in 1989, and one questionnaire form in 1990. N is one-sixth of N indicated in 1990.

# TABLE 12
## Trends in Thirty-Day Prevalence of Various Types of Drugs

| | Percent who used in last thirty days | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Class of 1975 | Class of 1976 | Class of 1977 | Class of 1978 | Class of 1979 | Class of 1980 | Class of 1981 | Class of 1982 | Class of 1983 | Class of 1984 | Class of 1985 | Class of 1986 | Class of 1987 | Class of 1988 | Class of 1989 | Class of 1990 | '89 - '90 change |
| Approx. N = | 9400 | 15400 | 17100 | 17800 | 15500 | 15900 | 17500 | 17700 | 16300 | 15900 | 16000 | 15200 | 16300 | 16300 | 16700 | 15200 | |
| *Any Illicit Drug Use*[a] | *30.7* | *34.2* | *37.6* | *38.9* | *38.9* | *37.2* | *36.9* | *33.5* | *32.4* | | | | | | | | |
| *Adjusted Version*[b] | — | — | — | — | — | — | — | *32.5* | *30.5* | *29.2* | *29.7* | *27.1* | *24.7* | *21.3* | *19.7* | *17.2* | −2.5sss |
| *Any Illicit Drug Other Than Marijuana*[c] | *15.4* | *13.9* | *15.2* | *15.1* | *16.8* | *18.4* | *21.7* | *19.2* | *18.4* | | | | | | | | |
| *Adjusted Version*[b] | — | — | — | — | — | — | — | *17.0* | *15.4* | *15.1* | *14.9* | *13.2* | *11.6* | *10.0* | *9.1* | *8.0* | −1.1s |
| **Marijuana/Hashish** | 27.1 | 32.2 | 35.4 | 37.1 | 36.5 | 33.7 | 31.6 | 28.5 | 27.0 | 25.2 | 25.7 | 23.4 | 21.0 | 18.0 | 16.7 | 14.0 | −2.7ss |
| **Inhalants**[d] | NA | 0.9 | 1.3 | 1.5 | 1.7 | 1.4 | 1.5 | 1.5 | 1.7 | 1.9 | 2.2 | 2.5 | 2.8 | 2.6 | 2.3 | 2.7 | +0.4 |
| *Inhalants Adjusted*[e] | *NA* | *NA* | *NA* | *NA* | *3.2* | *2.7* | *2.5* | *2.5* | *2.5* | *2.6* | *3.0* | *3.2* | *3.5* | *3.0* | *2.7* | *2.9* | *+0.2* |
| **Amyl/Butyl Nitrites**[f,g] | NA | NA | NA | NA | 2.4 | 1.8 | 1.4 | 1.1 | 1.4 | 1.4 | 1.6 | 1.3 | 1.3 | 0.6 | 0.6 | 0.6 | 0.0 |
| **Hallucinogens** | 4.7 | 3.4 | 4.1 | 3.9 | 4.0 | 3.7 | 3.7 | 3.4 | 2.8 | 2.6 | 2.5 | 2.5 | 2.5 | 2.2 | 2.2 | 2.2 | 0.0 |
| *Hallucinogens Adjusted*[h] | *NA* | *NA* | *NA* | *NA* | *5.3* | *4.4* | *4.5* | *4.1* | *3.5* | *3.2* | *3.8* | *3.5* | *2.8* | *2.3* | *2.9* | *2.3* | *−0.6* |
| **LSD** | 2.3 | 1.9 | 2.1 | 2.1 | 2.4 | 2.3 | 2.5 | 2.4 | 1.9 | 1.5 | 1.6 | 1.7 | 1.8 | 1.8 | 1.8 | 1.9 | +0.1 |
| **PCP**[f,g] | NA | NA | NA | NA | 2.4 | 1.4 | 1.4 | 1.0 | 1.3 | 1.0 | 1.6 | 1.3 | 0.6 | 0.3 | 1.4 | 0.4 | −1.0ss |
| **Cocaine** | 1.9 | 2.0 | 2.9 | 3.9 | 5.7 | 5.2 | 5.8 | 5.0 | 4.9 | 5.8 | 6.7 | 6.2 | 4.3 | 3.4 | 2.8 | 1.9 | −0.9sss |
| **"Crack"**[i] | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 1.3 | 1.6 | 1.4 | 0.7 | −0.7sss |
| **Other cocaine**[j] | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 4.1 | 3.2 | 1.9 | 1.7 | −0.2 |
| **Heroin** | 0.4 | 0.2 | 0.3 | 0.3 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.3 | 0.3 | 0.2 | 0.2 | 0.2 | 0.3 | 0.2 | −0.1 |
| **Other opiates**[k] | 2.1 | 2.0 | 2.8 | 2.1 | 2.4 | 2.4 | 2.1 | 1.8 | 1.8 | 1.8 | 2.3 | 2.0 | 1.8 | 1.6 | 1.6 | 1.5 | −0.1 |
| **Stimulants**[k] | 8.5 | 7.7 | 8.8 | 8.7 | 9.9 | 12.1 | 15.8 | 13.7 | 12.4 | NA | NA | NA | NA | NA | NA | NA | NA |
| *Stimulants Adjusted*[b,k] | *NA* | *NA* | *NA* | *NA* | *NA* | *NA* | *NA* | *10.7* | *8.9* | *8.3* | *6.8* | *5.5* | *5.2* | *4.6* | *4.2* | *3.7* | *−0.5* |
| **Crystal Methamphetamine**[l] | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 0.6 | NA |
| **Sedatives**[k,m] | 5.4 | 4.5 | 5.1 | 4.2 | 4.4 | 4.8 | 4.6 | 3.4 | 3.0 | 2.3 | 2.4 | 2.2 | 1.7 | 1.4 | 1.6 | 1.4 | −0.2 |
| **Barbiturates**[k] | 4.7 | 3.9 | 4.3 | 3.2 | 3.2 | 2.9 | 2.6 | 2.0 | 2.1 | 1.7 | 2.0 | 1.8 | 1.4 | 1.2 | 1.4 | 1.3 | −0.1 |
| **Methaqualone**[k,m] | 2.1 | 1.6 | 2.3 | 1.9 | 2.3 | 3.3 | 3.1 | 2.4 | 1.8 | 1.1 | 1.0 | 0.8 | 0.6 | 0.5 | 0.6 | 0.2 | −0.4s |
| **Tranquilizers**[k] | 4.1 | 4.0 | 4.6 | 3.4 | 3.7 | 3.1 | 2.7 | 2.4 | 2.5 | 2.1 | 2.1 | 2.1 | 2.0 | 1.5 | 1.3 | 1.2 | −0.1 |
| **Alcohol** | 68.2 | 68.3 | 71.2 | 72.1 | 71.8 | 72.0 | 70.7 | 69.7 | 69.4 | 67.2 | 65.9 | 65.3 | 66.4 | 63.9 | 60.0 | 57.1 | −2.9s |
| **Cigarettes** | 36.7 | 38.8 | 38.4 | 36.7 | 34.4 | 30.5 | 29.4 | 30.0 | 30.3 | 29.3 | 30.1 | 29.6 | 29.4 | 28.7 | 28.6 | 29.4 | +0.8 |
| **Steroids**[f] | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 0.8 | 1.0 | +0.2 |

NOTES: Level of significance of difference between the two most recent classes: s = .05, ss = .01, sss = .001. NA indicates data not available.

[a] Use of "any illicit drugs" includes any use of marijuana, hallucinogens, cocaine, and heroin, or any use of other opiates, stimulants, barbiturates, methaqualone (excluded in 1990), or tranquilizers not under a doctor's orders.

[b] Based on the data from the revised question, which attempts to exclude the inappropriate reporting of non prescription stimulants.

[c] Use of "other illicit drugs" includes any use of hallucinogens, cocaine, and heroin, or any use of other opiates, stimulants, barbiturates, methaqualone (excluded in 1990), or tranquilizers not under a doctor's orders.

[d] Data based on four questionnaire forms in 1976 1988; N is four fifths of N indicated. Data based on five questionnaire forms in 1989 1990; N is five sixths of N indicated.

[e] Adjusted for underreporting of amyl and butyl nitrites. See text for details.

[f] Data based on a single questionnaire form; N is one fifth of N indicated in 1979 1988 and one sixth of N indicated in 1989 and 1990.

[g] Question text changed slightly in 1987.

[h] Adjusted for underreporting of PCP. See text for details.

[i] Data based on two questionnaire forms in 1987 1989; N is two fifths of N indicated in 1987 1988 and two sixths of N indicated in 1989. Data based on six questionnaire forms in 1990.

[j] Data based on a single questionnaire form in 1987 1989; N is one fifth of N indicated in 1987 1988 and one sixth of N indicated in 1989. Data based on four questionnaire forms in 1990; N is four sixths of N indicated.

[k] Only drug use which was not under a doctor's orders is included here.

[l] Data based on two questionnaire forms; N is two sixths of N indicated.

[m] Data based on five questionnaire forms in 1975 1988, six questionnaire forms in 1989, and one questionnaire form in 1990. N is one sixth of N indicated in 1990.

# TABLE 13
## Trends in Thirty-Day Prevalence of Daily Use of Various Types of Drugs

| | Percent who used daily in last thirty days | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Class of 1975 | Class of 1976 | Class of 1977 | Class of 1978 | Class of 1979 | Class of 1980 | Class of 1981 | Class of 1982 | Class of 1983 | Class of 1984 | Class of 1985 | Class of 1986 | Class of 1987 | Class of 1988 | Class of 1989 | Class of 1990 | '89 – '90 change |
| Approx. N = | 9400 | 15400 | 17100 | 17800 | 15500 | 15900 | 17500 | 17700 | 16300 | 15900 | 16000 | 15200 | 16300 | 16300 | 16700 | 15200 | |
| Marijuana/Hashish | 6.0 | 8.2 | 9.1 | 10.7 | 10.3 | 9.1 | 7.0 | 6.3 | 5.5 | 5.0 | 4.9 | 4.0 | 3.3 | 2.7 | 2.9 | 2.2 | −0.7s |
| Inhalants[a] | NA | 0.0 | 0.0 | 0.1 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.2 | 0.2 | 0.1 | 0.2 | 0.2 | 0.3 | 0.0 |
| *Inhalants Adjusted*[b] | *NA* | *NA* | *NA* | *NA* | *0.1* | *0.2* | *0.2* | *0.2* | *0.2* | *0.2* | *0.4* | *0.4* | *0.4* | *0.3* | *0.3* | *0.3* | *0.0* |
| Amyl & Butyl Nitrites[c,d] | NA | NA | NA | NA | 0.0 | 0.1 | 0.1 | 0.0 | 0.2 | 0.1 | 0.3 | 0.5 | 0.3 | 0.1 | 0.3 | 0.1 | −0.2 |
| Hallucinogens | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.1 | 0.1 | 0.0 |
| *Hallucinogens Adjusted*[e] | *NA* | *NA* | *NA* | *NA* | *0.2* | *0.2* | *0.1* | *0.2* | *0.2* | *0.2* | *0.3* | *0.3* | *0.2* | *0.0* | *0.3* | *0.3* | *0.0* |
| LSD | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.0 | 0.1 | 0.1 | 0.1 | 0.0 | 0.1 | 0.0 | 0.0 | 0.1 | 0.0 |
| PCP[c,d] | NA | NA | NA | NA | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.3 | 0.2 | 0.3 | 0.1 | 0.2 | 0.1 | −0.1 |
| Cocaine | 0.1 | 0.1 | 0.1 | 0.1 | 0.2 | 0.2 | 0.3 | 0.2 | 0.2 | 0.2 | 0.4 | 0.4 | 0.3 | 0.2 | 0.3 | 0.1 | −0.2s |
| "Crack"[f] | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 0.1 | 0.1 | 0.2 | 0.1' | −0.2s |
| Other cocaine[g] | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 0.2 | 0.2 | 0.1 | 0.1 | 0.0 |
| Heroin | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.0 | 0.0 |
| Other opiates[h] | 0.1 | 0.1 | 0.2 | 0.1 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.2 | 0.1 | −0.1 |
| Stimulants[h] | 0.5 | 0.4 | 0.5 | 0.5 | 0.6 | 0.7 | 1.2 | 1.1 | 1.1 | NA | NA | NA | NA | NA | NA | NA | NA |
| *Stimulants Adjusted*[h,i] | *NA* | *NA* | *NA* | *NA* | *NA* | *NA* | *NA* | *0.7* | *0.8* | *0.6* | *0.4* | *0.3* | *0.3* | *0.3* | *0.3* | *0.2* | *−0.1* |
| Crystal Methamphetamine[j] | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 0.1 | NA |
| Sedatives[h,k] | 0.3 | 0.2 | 0.2 | 0.2 | 0.1 | 0.2 | 0.2 | 0.2 | 0.2 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 |
| Barbiturates[h] | 0.1 | 0.1 | 0.2 | 0.1 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.1 | 0.1 | 0.1 | 0.0 | 0.1 | 0.1 | 0.0 |
| Methaqualone[h,k] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.0 | 0.0 | 0.0 |
| Tranquilizers[h] | 0.1 | 0.2 | 0.3 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.1 | 0.0 | 0.1 | 0.1 | 0.0 |
| Alcohol | | | | | | | | | | | | | | | | | |
| Daily | 5.7 | 5.6 | 6.1 | 5.7 | 6.9 | 6.0 | 6.0 | 5.7 | 5.5 | 4.8 | 5.0 | 4.8 | 4.8 | 4.2 | 4.2 | 3.7 | −0.5 |
| 5+ drinks in a row/ last 2 weeks | 36.8 | 37.1 | 39.4 | 40.3 | 41.2 | 41.2 | 41.4 | 40.5 | 40.8 | 38.7 | 36.7 | 36.8 | 37.5 | 34.7 | 33.0 | 32.2 | −0.8 |
| Cigarettes | | | | | | | | | | | | | | | | | |
| Daily | 26.9 | 28.8 | 28.8 | 27.5 | 25.4 | 21.3 | 20.3 | 21.1 | 21.2 | 18.7 | 19.5 | 18.7 | 18.7 | 18.1 | 18.9 | 19.1 | +0.2 |
| Half-pack or more per day | 17.9 | 19.2 | 19.4 | 18.8 | 16.5 | 14.3 | 13.5 | 14.2 | 13.8 | 12.3 | 12.5 | 11.4 | 11.4 | 10.6 | 11.2 | 11.3 | +0.1 |
| Steroids[c] | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 0.1 | 0.2 | +0.1 |

NOTES: Level of significance of difference between the two most recent classes: s = .05, ss = .01, sss = .001. NA indicates data not available. Any apparent inconsistency between the change estimate and the prevalence estimates for the two most recent classes is due to rounding error.

[a] Data based on four questionnaire forms in 1976-1988; N is four-fifths of N indicated. Data based on five questionnaire forms in 1989-1990; N is five sixths of N indicated.

[b] Adjusted for underreporting of amyl and butyl nitrites. See text for details.

[c] Data based on a single questionnaire form; N is one-fifth of N indicated in 1979-1988 and one-sixth of N indicated in 1989 and 1990.

[d] Question text changed slightly in 1987.

[e] Adjusted for underreporting of PCP. See text for details.

[f] Data based on two questionnaire forms in 1987-1989; N is two-fifths of N indicated in 1987-1988 and two-sixths of N indicated in 1989. Data based on six questionnaire forms in 1990.

[g] Data were based on a single questionnaire form in 1987-1989; N is one-fifth of N indicated in 1987-1988 and one-sixth of N indicated in 1989. Data based on four questionnaire forms in 1990; N is four-sixths of N indicated.

[h] Only drug use which was not under a doctor's orders is included here.

[i] Based on the data from the revised question, which attempts to exclude the inappropriate reporting of non prescription stimulants.

[j] Data based on two questionnaire forms; N is two-sixths of N indicated.

[k] Data based on five questionnaire forms in 1975-1988, six questionnaire forms in 1989, and on a single questionnaire form in 1990; N is one-sixth of N indicated in 1990.

- Until 1978, the proportion of seniors involved in ***any illicit drug use*** had increased steadily, primarily because of the increase in marijuana use. About 54% of the classes of 1978 and 1979 reported having tried at least one illicit drug during the prior year, up from 45% in the class of 1975. Between 1979 and 1984, however, the proportion reporting using any illicit drug during the prior year dropped by 1 or 2% annually until 1985, when there was a brief pause in the decline. In 1986 the decline resumed, with annual prevalence dropping significantly to 33% in 1990. The overall decline in the proportion of students having any involvement with illicit drugs appears to be due primarily to the change in marijuana use.

- As Figure 6 and Table 10 illustrate, between 1976 and 1982 there had been a very gradual, steady increase in the proportion who have ever used ***some illicit drug other than marijuana***. The proportion going beyond marijuana in their lifetime had risen from 35% to 45% between 1976 and 1982, the peak year. Between 1982 and 1990 the revised version of this statistic has declined gradually from 41% to 29%. The annual prevalence of such behaviors (Figure 7), which had risen 9% between 1976 and 1981, leveled in 1982, and then dropped back slightly in each subsequent year to 18% in 1990. But the current (or 30-day) prevalence figures actually began to drop a year earlier—in 1982—and have shown the largest proportional drop (as may be seen in Figure 8 and in Table 12).

- Most of the earlier rise in ***other illicit drug use*** appeared to be due to the increasing popularity of cocaine with this age group between 1976 and 1979, and then due to the increasing use of stimulants between 1979 and 1982. However, as stated earlier, we believe that the upward shift in stimulant use was exaggerated because some respondents included instances of using over-the-counter stimulants in their reports of amphetamine use. (See discussion at the end of the introductory section.)

- Although the overall proportion using illicit drugs other than marijuana has changed rather gradually during recent years, greater fluctuations have occurred for specific drugs within the class. (See Tables 10, 11, and 12 for trends in lifetime, annual, and monthly prevalence figures for each class of drugs.)

- From 1976 to 1979 ***cocaine*** exhibited a substantial increase in popularity, with annual prevalence going from 6% in the class of 1976 to 12% in the class of 1979—a two-fold increase in just three years. For the nation as a whole, we judge there to have been little or no change in any of the cocaine prevalence statistics for this age group between 1979 and 1984. (Some possible regional changes will be discussed below.) In 1985, however, we reported statistically significant increases in annual and monthly use, with a leveling again in 1986. However, since 1986 both indicators of use have

## TABLE 14

## Trends in Lifetime, Annual, and Thirty-Day Prevalence in an Index of Illicit Drug Use

(Based on Original and Adjusted Amphetamine Questions)[a]

| | Class of 1975 | Class of 1976 | Class of 1977 | Class of 1978 | Class of 1979 | Class of 1980 | Class of 1981 | Class of 1982 | Class of 1983 | Class of 1984 | Class of 1985 | Class of 1986 | Class of 1987 | Class of 1988 | Class of 1989 | Class of 1990 | '89 – '90 change |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approx. N = | (9400) | (15400) | (17100) | (17800) | (15500) | (15900) | (17500) | (17700) | (16300) | (15900) | (16000) | (15200) | (16300) | (16300) | (16700) | (15200) | |
| | | | | | | | | Percent reporting use in lifetime | | | | | | | | | |
| **Marijuana Only** | 19.0 | 22.9 | 25.8 | 27.6 | 27.7 | 26.7 | 22.8 | 20.8 | 19.7 | | | | | | | | |
| *Adjusted Version* | — | — | — | — | — | — | — | 23.3 | 22.5 | 21.3 | 20.9 | 19.9 | 20.8 | 21.4 | 19.5 | 18.5 | −1.0 |
| **Any Illicit Drug Other Than Marijuana**[b] | 36.2 | 35.4 | 35.8 | 36.5 | 37.4 | 38.7 | 42.8 | 45.0 | 44.4 | | | | | | | | |
| *Adjusted Version* | — | — | — | — | — | — | — | 41.1 | 40.4 | 40.3 | 39.7 | 37.7 | 35.8 | 32.5 | 31.4 | 29.4 | −2.0s |
| **Total: Any Illicit Drug Use** | 55.2 | 58.3 | 61.6 | 64.1 | 65.1 | 65.4 | 65.6 | 65.8 | 64.1 | | | | | | | | |
| *Adjusted Version* | — | — | — | — | — | — | — | 64.4 | 62.9 | 61.6 | 60.6 | 57.6 | 56.6 | 53.9 | 50.9 | 47.9 | −3.0ss |
| | | | | | | | | Percent reporting use in last twelve months | | | | | | | | | |
| **Marijuana Only** | 18.8 | 22.7 | 25.1 | 26.7 | 26.0 | 22.7 | 18.1 | 17.0 | 16.6 | | | | | | | | |
| *Adjusted Version* | — | — | — | — | — | — | — | 19.3 | 19.0 | 17.8 | 18.9 | 18.4 | 17.6 | 17.4 | 15.4 | 14.6 | −0.8 |
| **Any Illicit Drug Other Than Marijuana**[b] | 26.2 | 25.4 | 26.0 | 27.1 | 28.2 | 30.4 | 34.0 | 33.8 | 32.5 | | | | | | | | |
| *Adjusted Version* | — | — | — | — | — | — | — | 30.1 | 28.4 | 28.0 | 27.4 | 25.9 | 24.1 | 21.1 | 20.0 | 17.9 | −2.1ss |
| **Total: Any Illicit Drug Use** | 45.0 | 48.1 | 51.1 | 53.8 | 54.2 | 53.1 | 52.1 | 50.8 | 49.1 | | | | | | | | |
| *Adjusted Version* | — | — | — | — | — | — | — | 49.4 | 47.4 | 45.8 | 46.3 | 44.3 | 41.7 | 38.5 | 35.4 | 32.5 | −2.9ss |
| | | | | | | | | Percent reporting use in last thirty days | | | | | | | | | |
| **Marijuana Only** | 15.3 | 20.3 | 22.4 | 23.8 | 22.2 | 18.8 | 15.2 | 14.3 | 14.0 | | | | | | | | |
| *Adjusted Version* | — | — | — | — | — | — | — | 15.5 | 15.1 | 14.1 | 14.8 | 13.9 | 13.1 | 11.3 | 10.6 | 9.2 | −1.4s |
| **Any Illicit Drug Other Than Marijuana**[b] | 15.4 | 13.9 | 15.2 | 15.1 | 16.8 | 18.4 | 21.7 | 19.2 | 18.4 | | | | | | | | |
| *Adjusted Version* | — | — | — | — | — | — | — | 17.0 | 15.4 | 15.1 | 14.9 | 13.2 | 11.6 | 10.0 | 9.1 | 8.0 | −1.1s |
| **Total: Any Illicit Drug Use** | 30.7 | 34.2 | 37.6 | 38.9 | 38.9 | 37.2 | 36.9 | 33.5 | 32.4 | | | | | | | | |
| *Adjusted Version* | — | — | — | — | — | — | — | 32.5 | 30.5 | 29.2 | 29.7 | 27.1 | 24.7 | 21.3 | 19.7 | 17.2 | −2.5sss |

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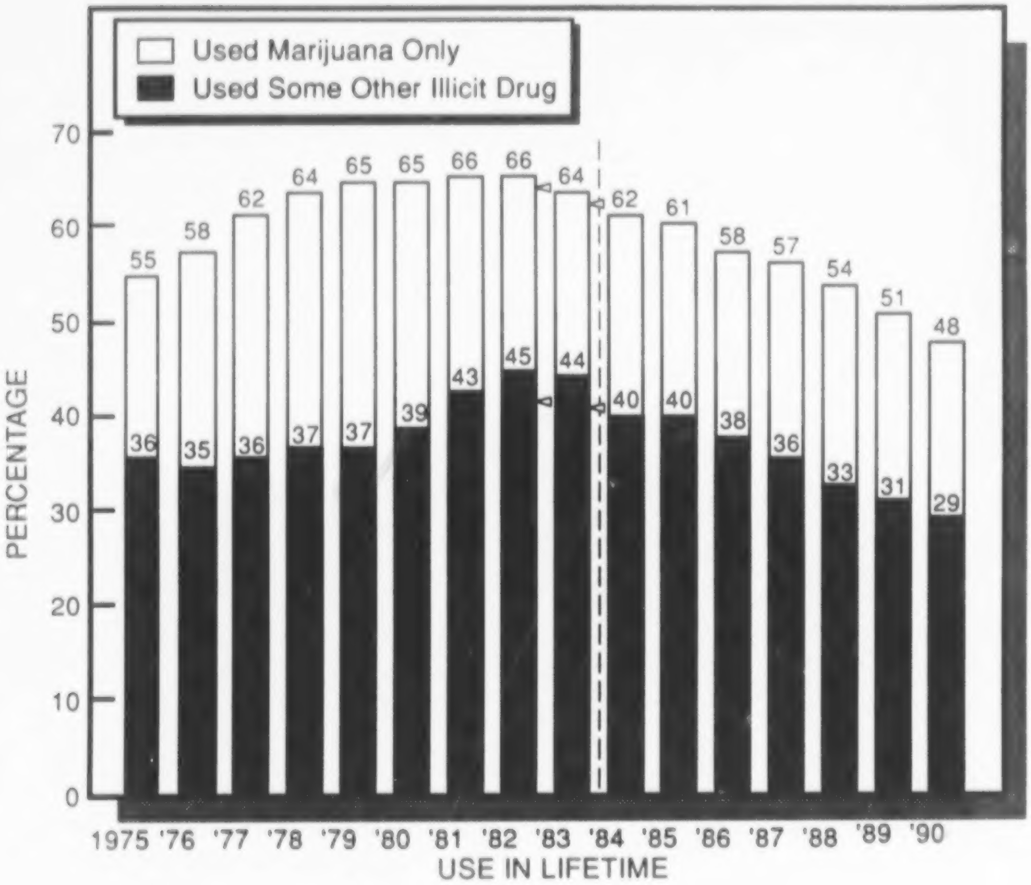
NOTES: Level of significance of difference between the two most recent classes: s = .05, ss = .01, sss = .001.

[a] Adjusted questions about stimulant use were introduced in 1982 to exclude more completely the inappropriate reporting of non prescription stimulants.

[b] Use of "other illicit drugs" includes any use of hallucinogens, cocaine, and heroin, or any use of other opiates, stimulants, barbiturates, methaqualone (excluded in 1990), or tranquilizers not under a doctor's orders.

FIGURE 6

**Trends in Lifetime Prevalence of an Illicit Drug Use Index**
All Seniors



NOTES: Use of "some other illicit drugs" includes any use of hallucinogens, cocaine, and heroin, or any use which is not under a doctor's orders of other opiates, stimulants, sedatives, or tranquilizers.

◁ shows the percentage which results if non-prescription stimulants are excluded.

The dashed vertical line indicates that after 1983 the shaded and open bars are defined by using the amphetamine questions which were revised to exclude non-prescription stimulants from the definition of "illicit drugs."

decreased significantly: annual use decreased from 12.7% in 1986 to 5.3% in 1990; monthly use decreased from 6.2% to 1.9% over the same period (a 70% drop).

- Use of ***crack cocaine*** was measured by only a single question in 1986, which was contained in one questionnaire form and asked only of those who reported any use of cocaine in the past 12 months. It simply asked if crack was one of the forms of cocaine they had used. It is thus an estimate of the annual prevalence of crack use.

  But other indicators gathered routinely in the study show some indirect evidence of the rapid spread of this form of the drug prior to 1986. For example, we found that (a) the proportion of seniors reporting that they smoked cocaine (as well as having used in the past year) doubled between 1983 and 1986 from 2.4% to 6.7%, (b) there was also a doubling in the same period (from 0.4% to 0.8%) in the proportion of all seniors who said that they both had used cocaine during the prior year and had at some time been unable to stop using when they tried to stop, and (c) there was a doubling between 1984 and 1986 in the proportion of seniors reporting active daily use of cocaine (from 0.2% to 0.4%). We think it likely that the advent of crack use during this period contributed to these statistics.

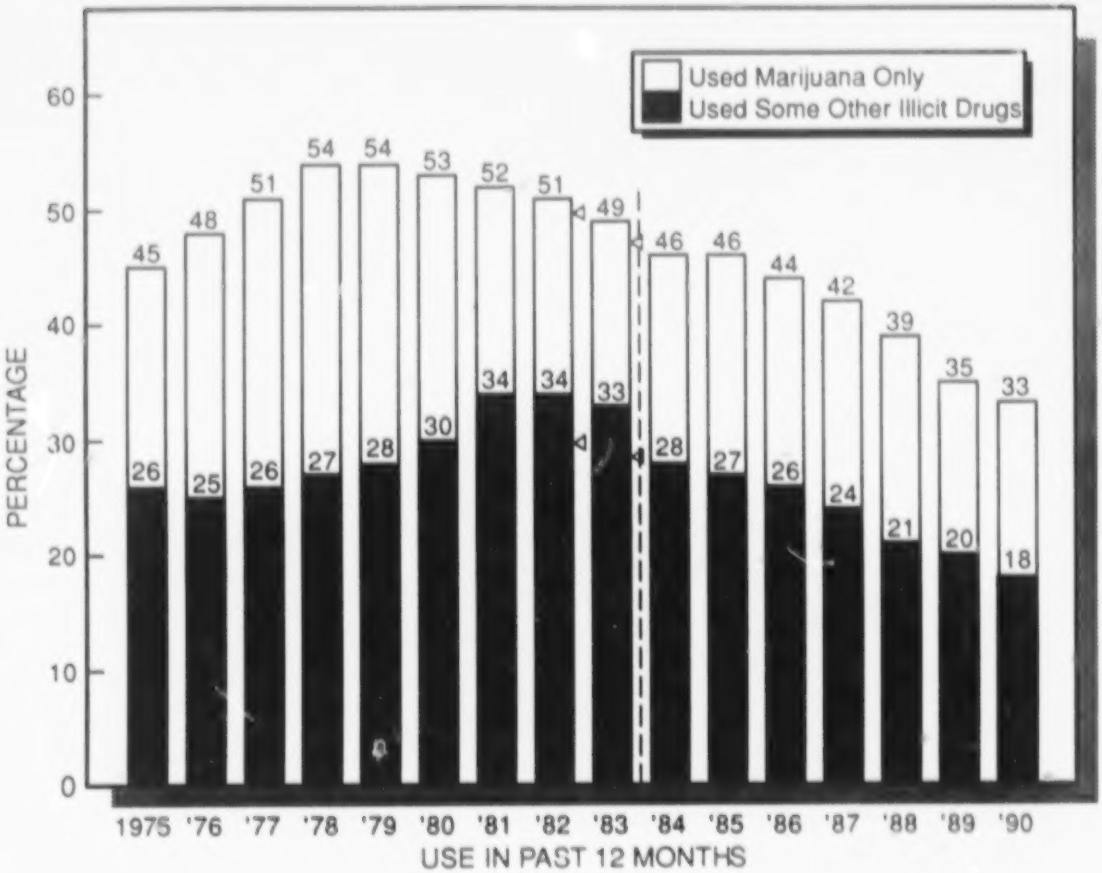
  In 1987 we introduced into two questionnaire forms the standard set of three questions (about crack use) which are used for all other classes of drugs reported here, and which ask separately about frequency of use in lifetime, past 12 months, and past 30 days. We added this set of questions about crack use to the other four forms beginning in 1990.

- The annual ***crack*** prevalence measured by the 1986 question was 4.1%; this figure declined to 3.9% in 1987, 3.1% in 1988 and 1989, and in 1990 is down significantly to 1.9%. Lifetime prevalence rates were 5.4% in 1987 (the first year this measure was available), 4.8% in 1988, 4.7% in 1989, and is down significantly to 3.5% in 1990. The corresponding figures for 30-day prevalence are 1.3%, 1.6%, 1.4%, and 0.7%, respectively. Thus the data indicate a gradual, but substantial decline in crack use since 1986 (or possibly 1987).

- It is important to note that ***crack*** use may be disproportionately located in the out-of-school population relative to most other drugs. (The same is likely true for PCP and heroin, as well.) Whether similar trends are taking place in that population remains an open question. In general, it would seem likely that the trends there would parallel those seen in the majority of the population the same age, but one could imagine some exceptions.

FIGURE 7

**Trends in Annual Prevalence of an Illicit Drug Use Index**
All Seniors



NOTES: Use of "some other illicit drugs" includes any use of hallucinogens, cocaine, and heroin, or any use which is not under a doctor's orders of other opiates, stimulants, sedatives, or tranquilizers.

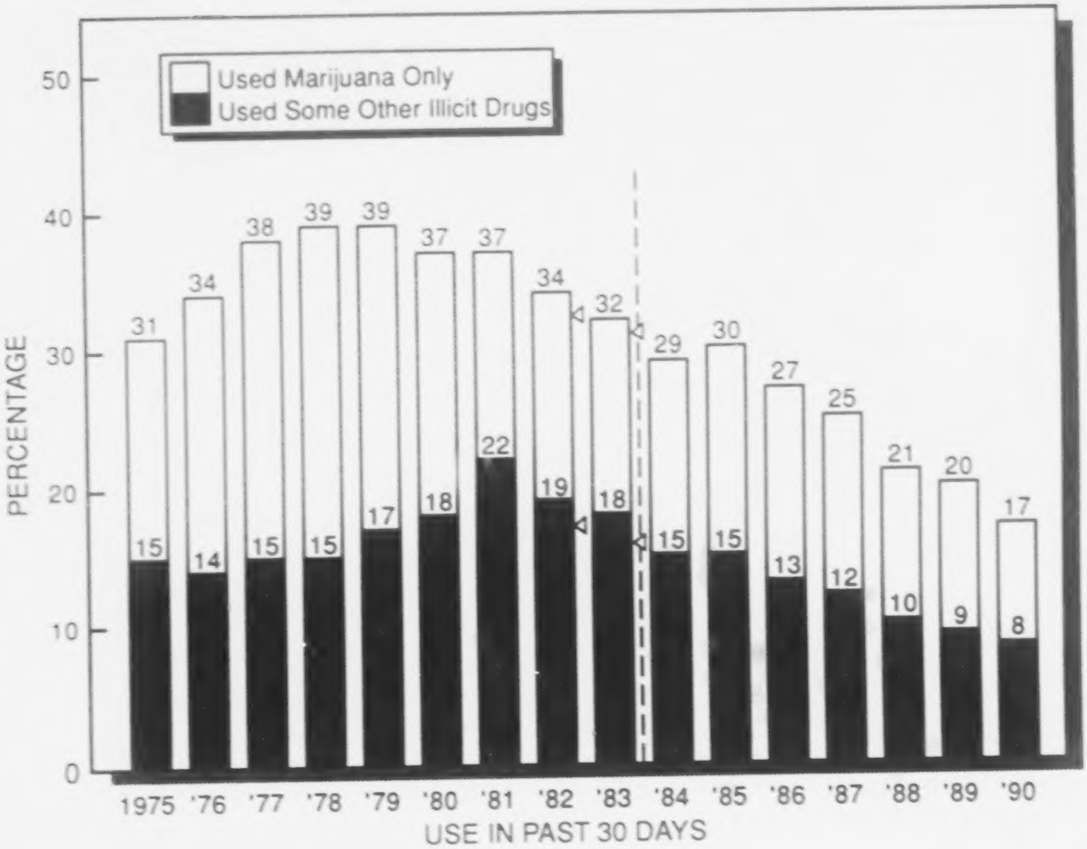
◁ shows the percentage which results if non-prescription stimulants are excluded.

The dashed vertical line indicates that after 1983 the shaded and open bars are defined by using the amphetamine questions which were revised to exclude non-prescription stimulants from the definition of "illicit drugs."

FIGURE 8

## Trends in Thirty-Day Prevalence of an Illicit Drug Use Index

All Seniors



NOTES: Use of "some other illicit drugs" includes any use of hallucinogens, cocaine, and heroin, or any use which is not under a doctor's orders of other opiates, stimulants, sedatives, or tranquilizers.

< shows the percentage which results if non-prescription stimulants are excluded.

The dashed vertical line indicates that after 1983 the shaded and open bars are defined by using the amphetamine questions which were revised to exclude non-prescription stimulants from the definition of "illicit drugs."

- Like cocaine use, ***inhalant*** use had been rising steadily in the late 1970's, though more slowly. Annual prevalence (in the unadjusted version) rose from 3.0% in 1976 and reached a peak of 5.4% in 1979. Starting in 1979 an adjustment was introduced for the underreporting of nitrite inhalants. Between 1979 and 1983, there was some overall decline in this adjusted version—in part due to a substantial drop in the use of the ***amyl and butyl nitrites***, for which annual prevalence declined from 6.5% in 1979 to 3.6% in 1983. Both measures increased modestly between 1983 and 1986, with annual use for inhalants (adjusted for use of nitrites) increasing from 6.2% in 1983 to 8.9% in 1986, and the use of nitrites increasing less, from 3.6% to 4.7%.

  Since 1986, there has been a slight decline in inhalant use (adjusted), with annual prevalence falling from 8.9% in 1986 to 7.5% in 1990, but a larger decline in nitrite use (from 4.7% to 1.4%). The gradual convergence of the unadjusted and adjusted inhalant prevalence rates (see Figure 9b) suggests that the number of seniors who use nitrites, but do not report themselves as inhalant users on the general question, has been diminishing.

- ***Stimulant*** (amphetamine) use, which had remained relatively unchanged between 1975 and 1978, began to show evidence of a gradual increase in use in 1979, with even greater increases to occur in 1980 and 1981. Between 1976 and 1981, reported annual prevalence rose by a full 10.2% (from 15.8% in 1976 to 26.0% in 1981); and daily use tripled, from 0.4% in 1976 to 1.2% in 1981. As stated earlier, we think these increases were exaggerated—perhaps sharply exaggerated—by respondents in the 1980 and 1981 surveys in particular including nonamphetamine, over-the-counter diet pills (as well as "look-alike" and "sound-alike" pills) in their answers. In 1982, we added new versions of the questions on amphetamine use, which were more explicit in instructing respondents not to include such nonprescription pills. (These were added to only three of the five forms of the questionnaire being used; the amphetamine questions were left unchanged in the other two forms until 1984.) As a result, Tables 10 through 14 give two estimates for amphetamines: one is based on the unchanged questions, which provides comparable data across time for longer-term ***trend*** estimates; the second (adjusted) estimate, based on the revised questions, provides our best assessments of current prevalence and recent trends in true amphetamine use.[11]

  As can be seen in 1982 and 1983, the two years for which both adjusted and unadjusted statistics are available, the unadjusted showed a modest amount of overreporting. Both types of statistics, however, suggest that a downturn in the current use of stimulants began to occur in 1982 and has continued since. For example, between 1982 and 1990 the annual prevalence for amphetamines (adjusted) fell by more than half from 20% to 9%. Current use also fell by more than half. Still, in the class of 1990 more than a sixth of all seniors (17.5%) have tried amphetamines (adjusted), even though the decline continues.

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[11] We think the unadjusted estimates for the earliest years of the survey were probably little affected by the improper inclusion of nonprescription stimulants, since sales of the latter did not burgeon until after the 1979 data collection.

- For ***sedatives*** the sustained, gradual decline between 1975 and 1979 halted in 1980 and 1981. For example, annual prevalence, which dropped steadily from 11.7% in 1975 to 9.9% in 1979, increased slightly to 10.5% by 1981. In 1982, though, the longer-term decline resumed again and annual prevalence has now fallen to 3.6%. In sum, annual sedative use has dropped by two-thirds since the study began in 1975. But, the overall trend lines for sedatives mask differential trends occurring for the two components of the measure (see Figure 9c). ***Barbiturate*** use declined rather steadily between 1975 and 1987 before leveling; annual prevalence (3.4%) is now less than one-third of the 1975 level (10.7%). ***Methaqualone*** use, on the other hand, rose sharply from 1978 until 1981., (In fact, it was the only drug other than stimulants that was still rising in 1981.) But in 1982, the use of methaqualone also began to decline, which accounted for the overall sedative category resuming its decline. Annual use now stands at less than one-tenth of its peak level observed by 1981 (0.7% in 1990 vs. 7.6% in 1981). This very low prevalence rate allowed us to drop the questions about methaqualone from five of the six forms in 1990; sedative prevalence, being a combination of barbiturate and methaqualone prevalence, is thus based also on only one questionnaire form.

- The usage statistics for ***tranquilizers*** (Figure 9b) peaked in 1977, and have declined fairly steadily since then. Lifetime prevalence has dropped by more than half (from 18% in 1977 to 7% in 1990), annual prevalence by more than two-thirds (from 11% to 3.5%), and 30-day prevalence by three-fourths (from 4.6% to 1.2%).

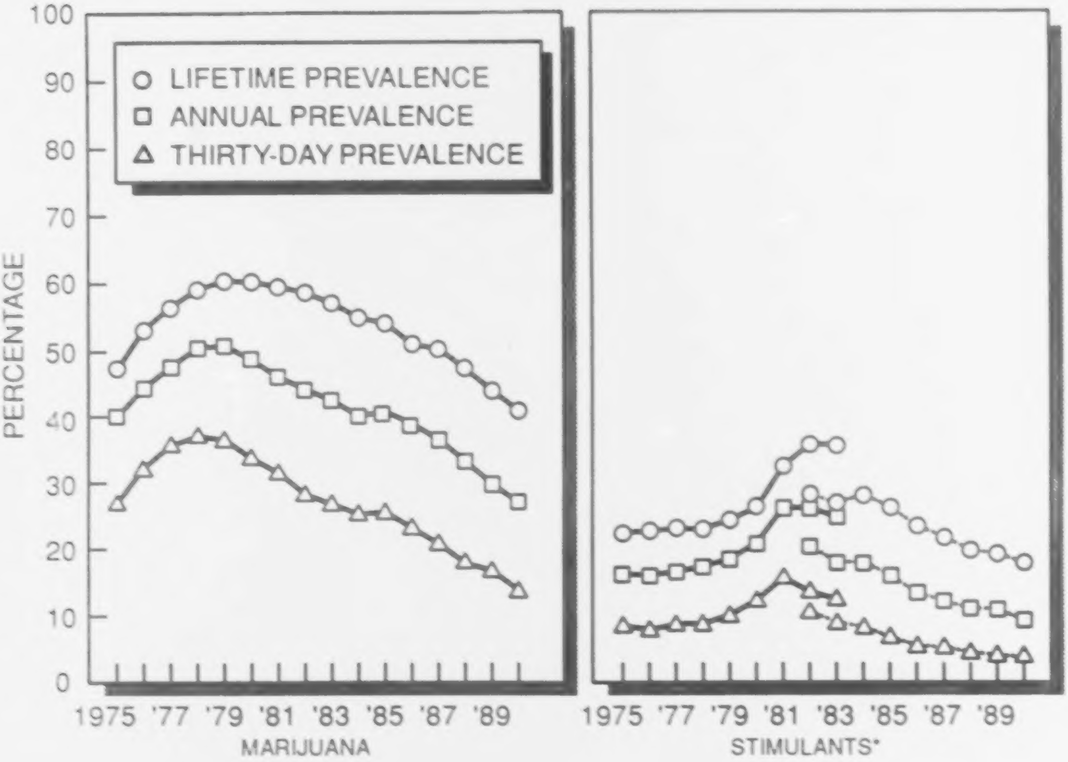
- Between 1975 and 1979 the prevalence of ***heroin*** use had been dropping rather steadily (Figure 9e). Lifetime prevalence dropped from 2.2% in 1975 to 1.1% in 1979 and annual prevalence had also dropped by half, from 1.0% in 1975 to 0.5% in 1979. This decline halted in 1980 and the statistics have remained almost constant since then.

- From 1975 to 1987 the use of ***opiates other than heroin*** remained fairly stable, with annual prevalence fluctuating between 5.2% and 6.4%. In 1988 there was a drop to 4.6%, where it has pretty much remained since.

- ***Hallucinogen*** use (unadjusted for underreporting of PCP) declined some in the middle of the seventies (from 11.2% in 1975 to 9.6% in 1978 on annual prevalence). (See Figure 9d.) It then leveled for

FIGURE 9a

**Trends in Lifetime, Annual, and Thirty-Day Prevalence of Various Drugs**
All Seniors



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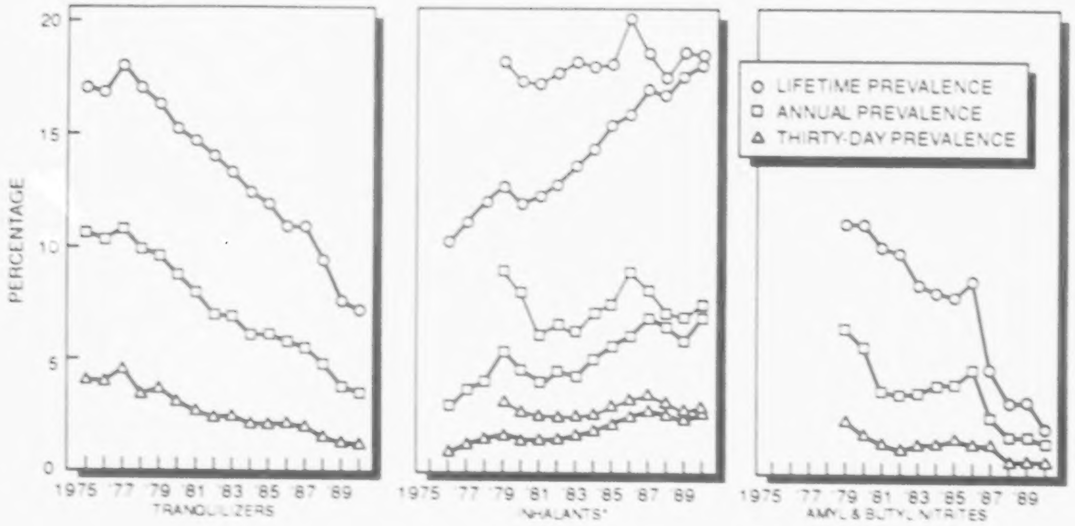
*The dotted lines connect percentages which result if non-prescription stimulants are excluded.

FIGURE 9b

**Trends in Lifetime, Annual, and Thirty-Day Prevalence of Various Drugs**
All Seniors



*The dotted lines connect percentages which are adjusted for underreporting of amyl and butyl nitrites.

FIGURE 9c

**Trends in Lifetime, Annual, and Thirty-Day Prevalence of Various Drugs**
All Seniors

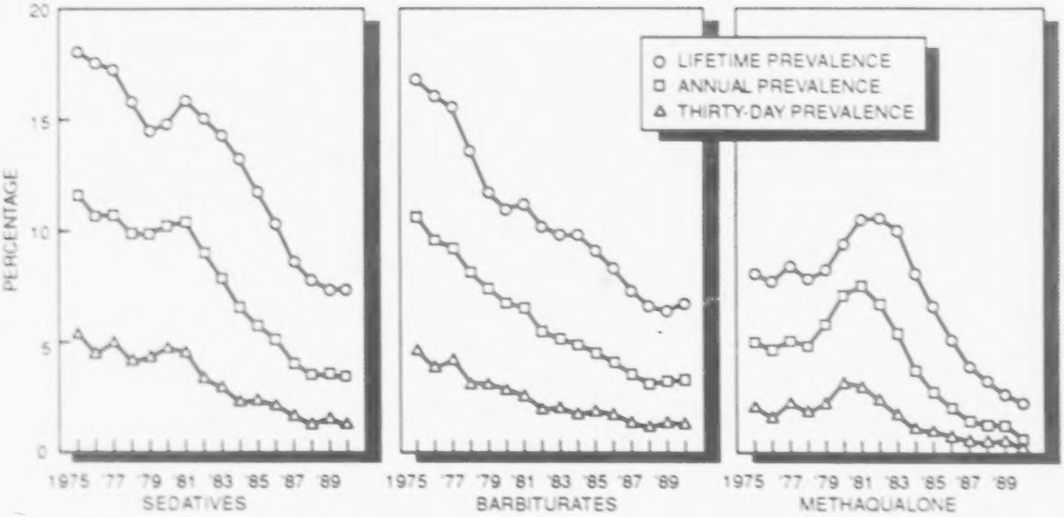
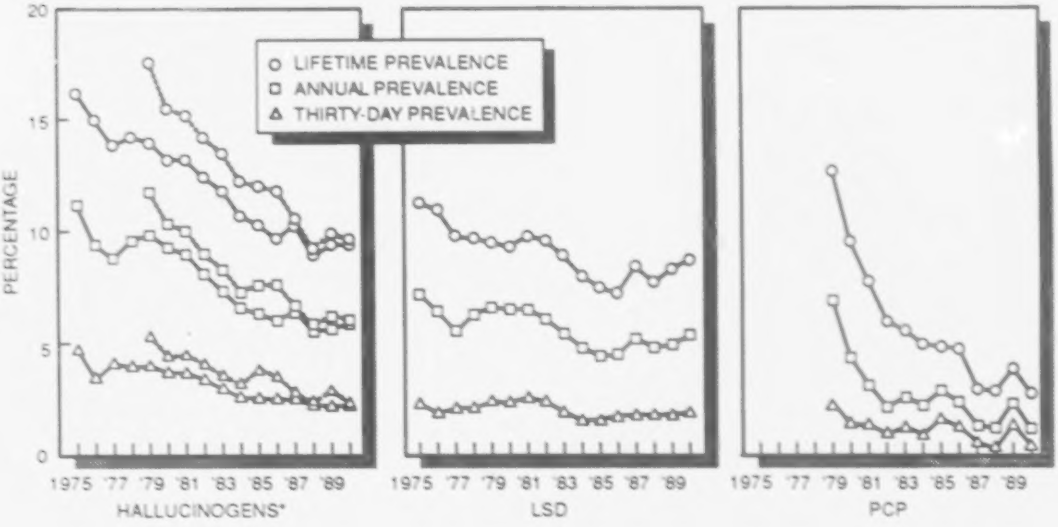


FIGURE 9d

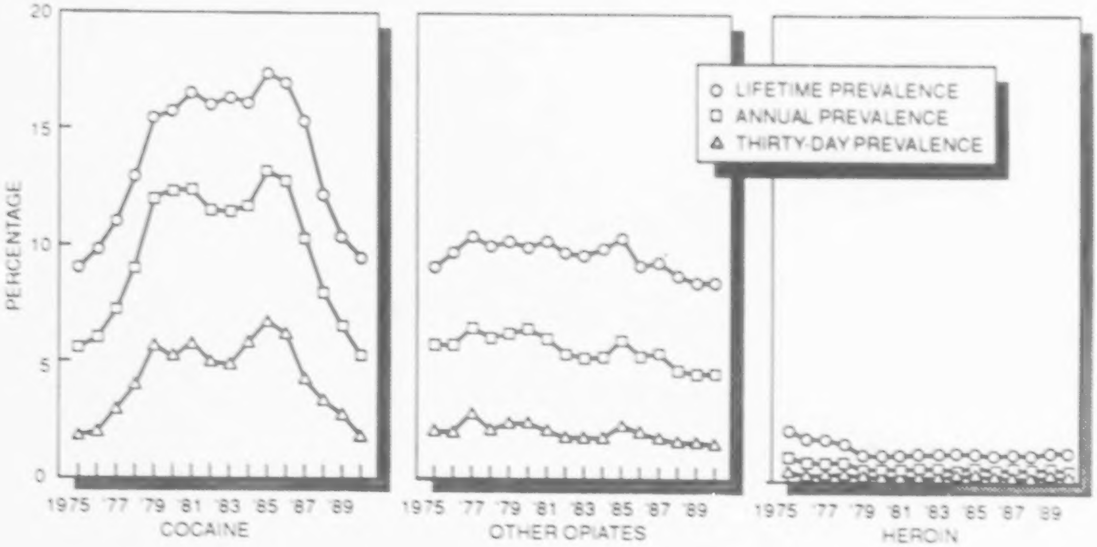
**Trends in Lifetime, Annual, and Thirty-Day Prevalence of Various Drugs**
All Seniors



*The dotted lines connect percentages which are adjusted for underreporting of PCP.

# FIGURE 9e

## Trends in Lifetime, Annual, and Thirty-Day Prevalence of Various Drugs
All Seniors



## FIGURE 9f

### Trends in Lifetime, Annual, and Thirty-Day Prevalence of Various Drugs
All Seniors

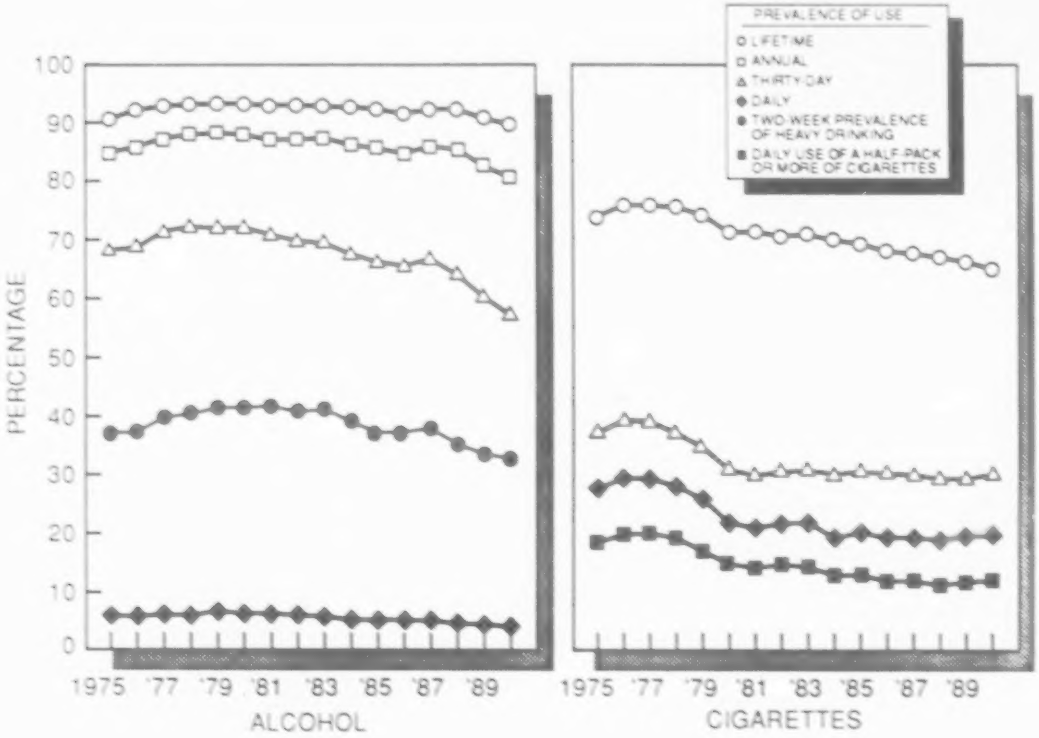
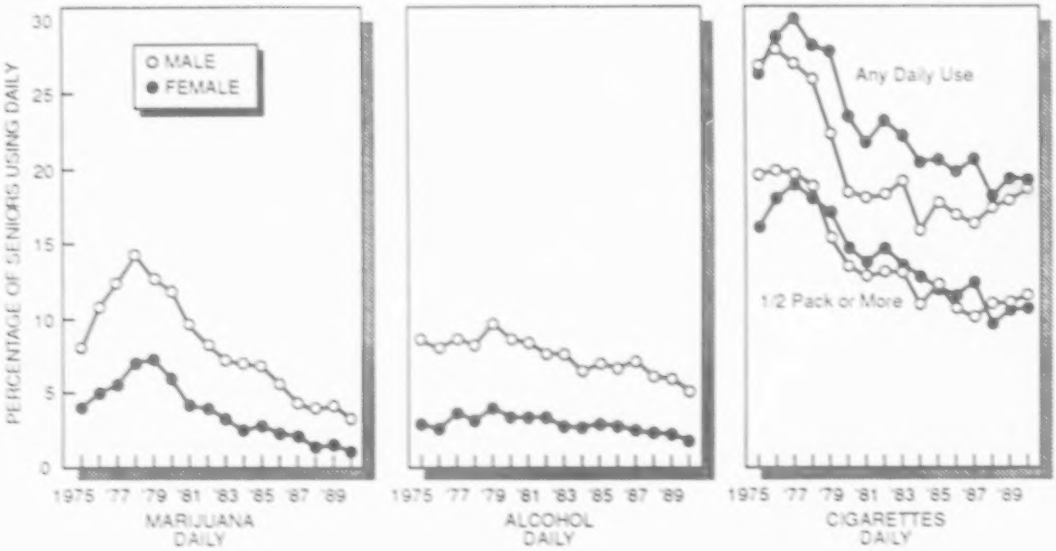


FIGURE 10

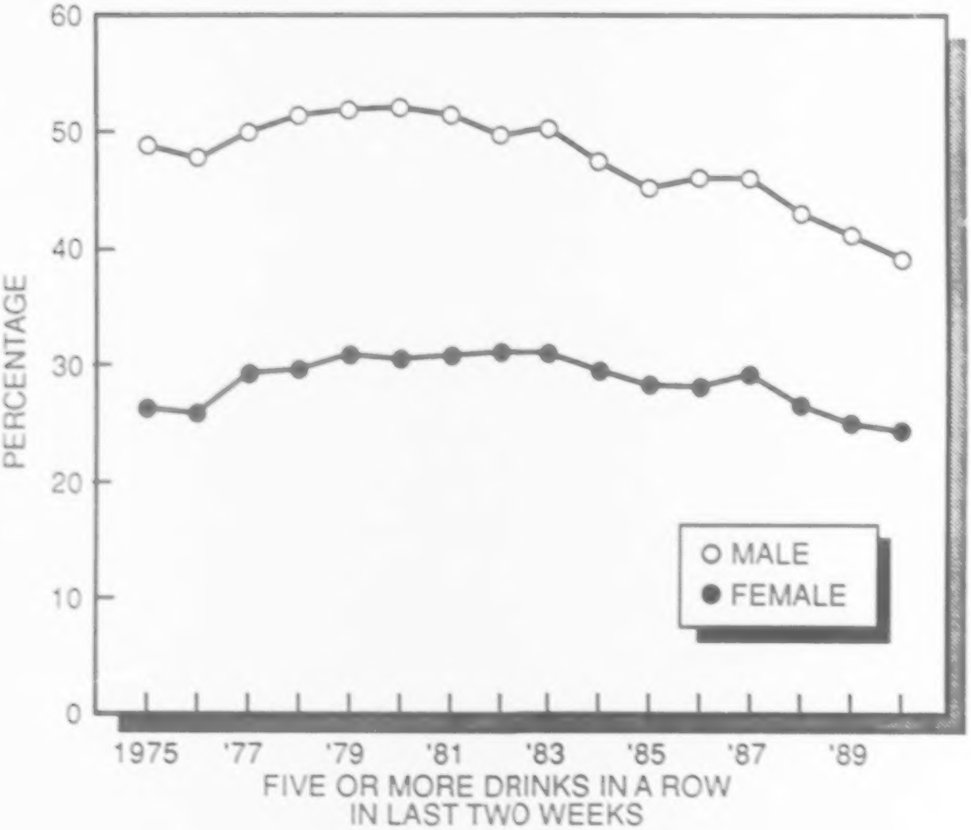
## Trends in Thirty-Day Prevalence of Daily Use of Marijuana, Alcohol, and Cigarettes
by Sex



NOTE: Daily use for alcohol and marijuana is defined as use on 20 or more occasions in the past thirty days. Daily use of cigarettes is defined as smoking one or more cigarettes per day in the past thirty days.

FIGURE 11

**Trends in Two-Week Prevalence of Heavy Drinking Among Seniors**
by Sex



several years before beginning another sustained decline. Between 1979, when the first figures adjusted for the underreporting of PCP were available, and 1984, there was a steady decline, with adjusted annual prevalence dropping from 11.8% in 1979 to 7.3% in 1984. The rate remained level through 1986 but then began dropping again, and stands at 6.0% in 1990—roughly half of what it was in 1975.

- ***LSD***, one of the major drugs comprising the hallucinogen class, showed a modest decline from 1975 to 1977, followed by considerable stability through 1981. Between 1981 and 1985, however, there was a second period of decline, with annual prevalence falling from 6.5% in 1981 to 4.4% in 1985. Use has remained fairly level since 1985, with annual prevalence in 1990 at 5.4%.

- Prevalence statistics for the specific hallucinogen ***PCP*** have shown a very substantial decline since 1979 when we first measured the use of this drug. Annual prevalence dropped from 7.0% in the class of 1979 to 2.2% in the class of 1982. After leveling for a few years, it has since dropped further to reach 1.2% in 1990.

- As can be seen from these varied patterns for the several classes of illicit drugs, while the overall proportion of seniors using ***any*** illicit drugs in their lifetime other than marijuana has changed some over the years, the mix of drugs they are using has changed even more. A number of drug classes have shown dramatic declines, some have shown substantial declines, and some have remained fairly stable.

- Turning to the licit drugs, in the latter half of the 70's there was a small upward shift in the prevalence of ***alcohol*** use among seniors. (See Figure 9f.) To illustrate, between 1975 and 1979 the annual prevalence rate rose steadily from 85% to 88%, the monthly prevalence rose from 68% to 72%, and the daily prevalence rose from 5.7% to 6.9%. Since 1979, there has been virtually no drop in lifetime prevalence, but some drop for the more current prevalence intervals: between 1979 and 1985, annual prevalence fell from 88% to 86%, monthly prevalence from 72% to 66%, and daily prevalence from 6.9% to 5.0%. (Clearly the change in daily use is the most important of these shifts.) They all remained fairly level from about 1985 to 1987, but since 1987 all rates have shown some further decline. Thirty-day prevalence, for example, fell from 66% to 57%, and daily prevalence fell from 4.8% to 3.7%.

- There was a similar pattern observed in the frequency of ***occasional heavy drinking*** (Figure 9f). When asked whether they had taken five or more drinks in a row during the prior two weeks, 37% of the seniors in 1975 said they had. This proportion rose gradually to 41% by 1979, where it remained through 1983. In both 1984 and 1985, we observed drops of 2% in this troublesome statistic, to 37%, exactly where it was in 1975; there was no further change in 1986 or 1987. Since 1987, however, it has dropped by another 6%, from 38% to 32% in 1990.

- Thus, to answer a frequently asked question, there is no evidence that the drop in marijuana use observed in recent years is leading to a concomitant increase in alcohol use. If anything, there has been some parallel decline in annual, monthly and daily alcohol use as well as in occasional heavy drinking.

- As for ***cigarette*** use, 1976 and 1977 appear to have been the years of peak smoking rates in this age group, as measured by lifetime, 30-day, and daily prevalence. (Annual prevalence is not asked.) Over the four subsequent graduating classes, 30-day prevalence dropped substantially from 38% in the class of 1977 to 29% in the class of 1981. (See Tables 12 and 13 and Figure 9f.) More importantly, ***daily cigarette use*** dropped over that same interval from 29% to 20%, and daily use of half-pack-a-day or more from 19.4% to 13.5% between 1977 and 1981 (nearly a one-third decrease). In 1981 we reported that the decline appeared to be decelerating; in 1982 and 1983 it clearly had halted. There was a brief resumption of the earlier decline in 1984, with daily use falling from 21% to 19%, and daily use of half-pack-a-day dropping from 13.8% to 12.3%. Since 1984, there has been very little change in most of these statistics. In 1990 daily use stands at 19%, and half-pack-a-day use at 11%. What seems most noteworthy is the lack of appreciable decline in the smoking rates since the early 80's, despite (a) the general decline which has occurred for most other drugs (including alcohol), (b) some rise in the perceived harmfulness and personal disapproval associated with smoking, and (c) the considerable amount of restrictive legislation which has been debated and enacted at state and local levels in the past several years.

## TRENDS IN NONCONTINUATION RATES

Table 15 shows how the user noncontinuation rates observed for the various classes of drugs have changed over time. Recall that the noncontinuation rate, as used here, is defined as the percentage of those who ever used the drug but did not use in the year prior to the survey.

- For ***most drugs*** there has been relatively little change in noncontinuation rates among those who have tried the drug at least once. There are some noticeable exceptions, however.

- ***Marijuana*** has shown some increase in the noncontinuation rates between 1979 (when it was 16%) and 1984 (when it was 27%). This is what gave rise to the greater drop in annual use than in

# TABLE 15
## Trends in Noncontinuation Rates Among Seniors Who Ever Used Drug in Lifetime

| | Percent who did not use in last twelve months | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Class of 1975 | Class of 1976 | Class of 1977 | Class of 1978 | Class of 1979 | Class of 1980 | Class of 1981 | Class of 1982 | Class of 1983 | Class of 1984 | Class of 1985 | Class of 1986 | Class of 1987 | Class of 1988 | Class of 1989 | Class of 1990 |
| Marijuana/Hashish | 15.4 | 15.7 | 15.6 | 15.2 | 15.9 | 19.1 | 22.5 | 24.5 | 25.8 | 27.1 | 25.1 | 23.8 | 27.7 | 29.9 | 32.3 | 33.7 |
| Inhalants | NA | 70.9 | 66.7 | 65.8 | 57.5 | 61.3 | 66.7 | 64.8 | 68.4 | 64.6 | 63.0 | 61.6 | 59.4 | 61.1 | 66.5 | 61.7 |
| Adjusted | NA | NA | NA | NA | 50.8 | 55.7 | 65.5 | 63.3 | 64.4 | 58.4 | 59.8 | 55.7 | 56.5 | 59.4 | 62.9 | 59.5 |
| Nitrites | NA | NA | NA | NA | 41.4 | 48.6 | 63.4 | 63.3 | 57.1 | 50.6 | 49.4 | 45.3 | 44.7 | 46.9 | 48.5 | 33.3 |
| Hallucinogens | 31.3 | 37.7 | 36.7 | 32.9 | 29.8 | 30.1 | 32.3 | 35.2 | 38.7 | 39.3 | 38.8 | 38.1 | 37.9 | 38.2 | 40.4 | 37.2 |
| Adjusted | NA | NA | NA | NA | 31.2 | 32.5 | 35.7 | 38.0 | 36.7 | 40.6 | 36.9 | 36.1 | 36.8 | 37.0 | 37.4 | 38.1 |
| LSD | 36.3 | 41.8 | 43.9 | 35.1 | 30.5 | 30.1 | 33.7 | 36.5 | 39.3 | 41.3 | 41.3 | 37.5 | 38.1 | 37.7 | 41.0 | 37.9 |
| PCP | NA | NA | NA | NA | 45.3 | 54.2 | 59.0 | 63.3 | 53.6 | 54.0 | 40.8 | 50.0 | 56.7 | 58.6 | 38.5 | 57.1 |
| Cocaine | 37.8 | 38.1 | 33.3 | 30.2 | 22.1 | 21.7 | 24.8 | 28.1 | 29.6 | 28.0 | 24.3 | 24.9 | 32.2 | 34.7 | 36.9 | 43.6 |
| "Crack" | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 27.8 | 35.4 | 34.0 | 45.7 |
| Heroin | 54.5 | 55.6 | 55.6 | 50.0 | 54.5 | 54.5 | 54.5 | 50.0 | 50.0 | 61.5 | 50.0 | 54.5 | 58.3 | 54.5 | 53.8 | 61.5 |
| Other Opiates | 36.7 | 40.6 | 37.9 | 39.4 | 38.6 | 35.7 | 41.6 | 44.8 | 45.7 | 46.4 | 42.2 | 42.2 | 42.4 | 46.5 | 47.0 | 45.8 |
| Stimulants | 27.4 | 30.1 | 29.1 | 25.3 | 24.4 | 21.2 | 19.3 | 26.7 | 30.5 | NA | NA | NA | NA | NA | NA | NA |
| Adjusted | NA | NA | NA | NA | NA | NA | NA | 27.2 | 33.5 | 36.6 | 39.7 | 42.7 | 43.5 | 44.9 | 43.5 | 48.0 |
| Sedatives | 35.7 | 39.5 | 37.9 | 38.1 | 32.2 | 30.9 | 34.4 | 40.1 | 45.1 | 50.4 | 50.8 | 50.0 | 52.9 | 52.6 | 50.0 | NA |
| Barbiturates | 36.7 | 40.7 | 40.4 | 40.9 | 36.4 | 38.2 | 41.6 | 46.6 | 47.5 | 50.5 | 50.0 | 50.0 | 51.4 | 52.2 | 49.2 | 50.0 |
| Methaqualone | 37.0 | 39.7 | 38.8 | 38.0 | 28.9 | 24.2 | 28.3 | 36.4 | 46.5 | 54.2 | 58.2 | 59.6 | 62.5 | 60.6 | 51.9 | 69.6 |
| Tranquilizers | 37.6 | 38.7 | 40.0 | 41.8 | 41.1 | 42.8 | 45.6 | 50.0 | 48.1 | 50.8 | 48.7 | 46.8 | 49.5 | 48.9 | 50.0 | 51.4 |
| Alcohol | 6.2 | 6.7 | 5.9 | 5.8 | 5.3 | 5.7 | 6.0 | 6.5 | 5.7 | 7.1 | 7.2 | 7.4 | 7.0 | 7.3 | 8.8 | 9.9 |
| Cigarettes[a] | 16.0 | 16.7 | 16.2 | 17.9 | 19.6 | 21.4 | 20.8 | 19.1 | 18.6 | 18.5 | 15.9 | 17.0 | 17.1 | 18.2 | 18.5 | 18.2 |

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[a] Percentage of regular smokers (ever) who did not smoke at all in the last thirty days.

lifetime use described earlier. Between 1984 and 1987 there was no further increase, but since then the noncontinuation rate has risen to 34%.

- The noncontinuation rate for ***cocaine*** decreased from 38% 1976 to 22% in 1979, corresponding to the period of increase in the overall prevalence of use. It then remained fairly stable through 1986, corresponding to a period of stability in the actual prevalence statistics. Since 1986, use has fallen substantially, reflecting in part a considerable increase in the rate of noncontinuation, which rose from 25% in 1986 to 44% in 1990.

- For ***crack***, statistics exist only since 1987, but they also show a sharp rise in noncontinuation, from 28% in 1987 to 46% in 1990.

- There was considerably more noncontinuation of ***stimulant*** use in 1990 (48%) than in 1982 (when it was 27%), based on the revised usage questions. Earlier data (based on the unrevised questions), suggest that the change began after 1981.

- Much of the recent decline in ***sedative*** use is also accounted for by a changing rate of noncontinuation for the specific substances involved. For example, in the case of ***barbiturates*** the noncontinuation rate rose from 36% in 1979 to 50% in 1990.

  Similarly, in 1980, 24% of the seniors who ever used ***methaqualone*** did not use in the prior year, whereas the comparable statistic by 1990 was almost three times as high (70%).

- ***Tranquilizer*** users showed a steady, gradual increase in noncontinuation between 1975 and 1982, as the rate rose from 38% to 50%. Since 1982 there has not been any further systematic change, however.

- Table 16 provides noncontinuation rates for seniors who were more established users—that is, for those who report having used the drug ten or more times in their life. It shows that noncontinuation is far less likely among such heavier users than among all users of a given drug. Further, while the trends in noncontinuation mentioned above for ***marijuana***, ***cocaine***, ***stimulants***, ***barbiturates***, ***methaqualone***, and ***tranquilizers*** are all similar to trends observed in the noncontinuation rates for heavier users of those same drugs, the percentage fluctuations tend to be considerably smaller among the heavier users.

## TABLE 16

## Trends in Noncontinuation Rates Among Seniors Who Used Drug Ten or More Times in Lifetime

| | Percent who did not use in last twelve months | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Class of 1975 | Class of 1976 | Class of 1977 | Class of 1978 | Class of 1979 | Class of 1980 | Class of 1981 | Class of 1982 | Class of 1983 | Class of 1984 | Class of 1985 | Class of 1986 | Class of 1987 | Class of 1988 | Class of 1989 | Class of 1990 |
| Marijuana/Hashish | 4.0 | 4.0 | 4.1 | 3.7 | 4.6 | 5.4 | 7.2 | 7.6 | 8.3 | 8.8 | 7.8 | 7.9 | 9.2 | 9.9 | 10.6 | 12.3 |
| Inhalants | NA | 48.9 | 42.6 | 34.6 | 23.8 | 25.2 | 23.8 | 27.2 | 23.1 | 23.4 | 25.8 | 15.3 | 21.1 | 21.5 | 25.9 | 24.0 |
| Nitrites* | | | | | | | | | | | | | | | | |
| Hallucinogens | 10.8 | 16.1 | 15.2 | 10.8 | 8.1 | 8.4 | 7.7 | 7.5 | 13.0 | 14.1 | 12.2 | 11.1 | 11.9 | 16.6 | 21.8 | 16.5 |
| LSD | 15.2 | 17.3 | 18.0 | 12.2 | 7.4 | 6.4 | 7.1 | 7.5 | 15.3 | 12.1 | 12.6 | 12.2 | 11.5 | 16.0 | 21.2 | 16.0 |
| PCP* | | | | | | | | | | | | | | | | |
| Cocaine | 7.7 | 8.2 | 6.2 | 3.8 | 3.1 | 3.1 | 3.1 | 2.9 | 6.2 | 3.1 | 2.5 | 3.5 | 7.6 | 11.4 | 11.3 | 19.6 |
| "Crack"** | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 13.4 | 2.1 | 5.2 | 26.2 |
| Heroin* | | | | | | | | | | | | | | | | |
| Other Opiates | 9.6 | 11.6 | 9.7 | 9.9 | 8.7 | 10.8 | 10.1 | 13.5 | 16.4 | 15.4 | 12.2 | 13.8 | 15.6 | 19.3 | 15.2 | 15.9 |
| Stimulants | 8.0 | 9.8 | 7.6 | 7.4 | 6.1 | 4.1 | 4.4 | 6.4 | 7.5 | NA | NA | NA | NA | NA | NA | NA |
| Adjusted | NA | NA | NA | NA | NA | NA | NA | 8.4 | 10.7 | 12.7 | 17.5 | 17.6 | 17.5 | 16.0 | 17.4 | 18.1 |
| Sedatives | 13.6 | 16.2 | 12.4 | 12.8 | 8.6 | 10.5 | 7.6 | 8.6 | 16.4 | 20.8 | 23.6 | 19.7 | 23.1 | 25.2 | 17.3 | NA |
| Barbiturates | 13.4 | 16.5 | 12.9 | 13.5 | 11.2 | 11.7 | 8.9 | 12.6 | 17.7 | 22.8 | 20.6 | 19.7 | 20.7 | 23.4 | 18.0 | 19.8 |
| Methaqualone | 13.5 | 15.9 | 11.9 | 13.1 | 6.1 | 6.0 | 4.9 | 8.0 | 16.3 | 23.3 | 26.7 | 24.9 | 32.2 | 29.8 | 18.6 | 41.0*** |
| Tranquilizers | 12.0 | 13.0 | 11.1 | 14.4 | 14.1 | 14.3 | 16.3 | 16.0 | 14.8 | 18.8 | 19.2 | 15.0 | 17.1 | 15.8 | 11.7 | 19.3 |
| Alcohol | 0.6 | 0.8 | 0.6 | 0.9 | 0.7 | 0.8 | 1.0 | 0.9 | 0.9 | 1.1 | 1.2 | 1.0 | 1.1 | 1.2 | 1.5 | 1.9 |

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*The cell entries in these rows were omitted because they were based on fewer than 50 seniors who used ten or more times. All other cells contain more than 50 cases.

**Based on 85 cases in 1987, 54 cases in 1988, and 56 cases in 1989. Crack was included in all six questionnaire forms in 1990.

***Based on 9 cases in 1990, because this question was asked in only one of the six questionnaire forms that year.

## COMPARISONS AMONG SUBGROUPS IN TRENDS IN PREVALENCE

### *Sex Differences in Trends*

- Most of the sex differences mentioned earlier for individual classes of drugs have remained relatively unchanged over the past fifteen years—that is, any trends in overall use have been fairly parallel for both males and females. There are, however, some exceptions (tabular data not shown).

- The absolute differences between the sexes in ***marijuana*** use narrowed somewhat during the eighties from what they were in the seventies, although both sexes have seen a decline in use since 1979.

- After 1977, the small sex difference involving ***tranquilizer*** use (males this age had used them less frequently than females) virtually disappeared.

- The ratio of male-female prevalence rates in ***cocaine*** use, which was rather large in the mid-1970's, diminished somewhat in the early 1980's and narrowed further during the recent downturn in use. Although the differences have lessened, males still use more frequently than females. (Both sexes showed a decline in ***crack*** use since 1986, the first year for which data are available, and males continue to have higher rates.)

- Regarding ***stimulant*** use, a sex difference emerged in 1981 and 1982 using the original version of the question; but the revised question introduced in 1982 showed no sex difference, suggesting that over-the-counter diet pills accounted for higher use among females in those two years. Since 1982 females have shown slightly higher or equivalent rates of use of stimulant use due to their more frequent use of amphetamines for the purpose of weight loss. Both sexes have shown declines in use of stimulants since 1984.

- An examination of the trends in the proportion of each sex using ***any illicit drug*** in the prior year (see Figure 12) shows that use among males rose between 1975 and 1978, and then declined steadily (from 59% in 1978 to 34% in 1990). Use among females peaked later (in 1981), increasing from 41% in 1975 to 51% in 1981 and then dropping through 1990 to 30%. However, if amphetamine use is deleted from the statistics, female use peaked earlier (in 1979) and then declined as well. Note that the earlier declines for both males and females were attributable largely to the declining marijuana use rates; the later drops were due to decreases in use of the other illicit drugs (primarily cocaine), in addition to marijuana.

- Regarding the apparent parity between the sexes in the levels and trends in the prevalence of use of ***illicit drugs other than marijuana***, when amphetamine use is excluded from the calculations, somewhat differential levels emerge for males vs. females (males are higher), although the trends tend to remain fairly parallel. In 1990, use by both males and females dropped slightly (by less than 1%), after larger decreases in the late 1980's.

- The sex differences in ***alcohol*** use have narrowed slightly since 1975. For example, the sex differences in annual prevalence have been nearly eliminated. The 30-day prevalence rates for males and females differed by 12.8% in 1975 (75.0% vs. 62.2%, respectively), but that difference was down to 9.0% by 1990 (61.3% vs. 52.3%). And, although there still remain substantial sex differences in daily use and occasions of heavy drinking, there has been some narrowing of the differences there, as well (Figure 11). For example, between 1975 and 1990 the proportion of males admitting to having five drinks in a row during the prior two weeks showed a net decrease of 9.9% from (49.0% to 39.1%), whereas females decreased by only 2.0% from 26.4% to 24.4%.[12]

- On one of the six questionnaire forms used in the study, respondents are asked separately about their use of beer, wine, and hard liquor. The answers to these questions reveal that it is primarily a differential rate of beer consumption that accounts for the large sex differences in occasions of heavy drinking: 37% of 1990 senior males report having five or more ***beers*** in a row during the prior two weeks vs. 16% of the females. In contrast, males are somewhat more likely than females to report having 5 or more drinks of ***hard liquor*** (21% for males vs. 13% for females) and slightly more likely to drink ***wine*** that heavily (6% for males and 4% for females). This pattern—a large sex difference in heavy use of beer, a smaller difference in heavy use of hard liquor, and very little difference in heavy use of wine—has been present throughout the study, with little systematic change over time. More recently questions on wine coolers were added; and here we find females slightly more likely to report drinking five or more in a row in the past two weeks (11% vs. 10% for males).

- Regarding ***cigarette*** smoking, we observed in 1977 that females for the first time caught up to males at the half-a-pack per day smoking level (Figure 10 given earlier). Then, between 1977 and 1981, both sexes showed a decline in the prevalence of such smoking; but use among males dropped slightly more, resulting in a modest reversal of the sex differences. Since 1988 there has been practically no difference in smoking rates, but an examination of Figure

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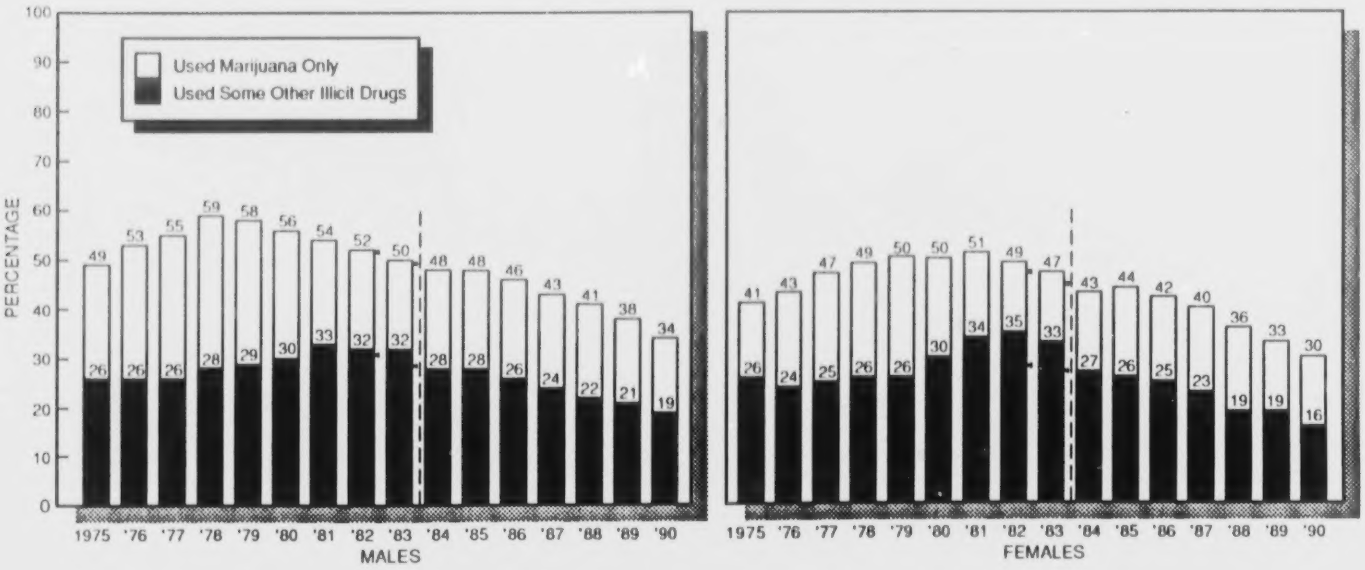
[12] It is worth noting that the same number of drinks produces substantially greater impact on the blood alcohol level of the average female than the average male, because of sex differences in body weight. Thus, sex differences in frequency of actually getting drunk may not be as great as the binge drinking statistics would indicate, since they are based on a fixed number of drinks.

FIGURE 12

**Trends in Seniors' Annual Prevalence of an Illicit Drug Use Index**
by Sex



NOTE: See Figure 8 for relevant footnotes.

10 shows that slightly more males smoke at the half-a-pack per day level but that any daily smoking is about as common among males (18.6%) as females (19.3%).

### *Trend Differences Related to College Plans*

- Both college-bound and noncollege-bound students have been showing fairly parallel trends in overall ***illicit drug use*** over the last several years (see Figure 13).[13]

- Changes in use of the ***specific drug classes*** have also been generally quite parallel for the two groups since 1976, with only minor exceptions. (Data not shown.) Between 1983 and 1986 annual ***cocaine*** use increased very little among the college-bound, but rose by about one-quarter among the noncollege-bound, perhaps due to the greater popularity of the new cocaine form called "crack" among the noncollege-bound. Since 1986 both groups have shown large, and for the most part parallel, declines in use.

- In fact, as the overall prevalence of a number of drugs has fallen there has been some convergence of usage rates between the college bound and noncollege-bound, due to a greater drop among the latter group. This has been true for ***tranquilizers***, ***sedatives***, ***methaqualone***, ***nitrite inhalants***, ***LSD***, and ***PCP***.

### *Regional Differences in Trends*

- In all four regions of the country proportions of seniors using ***any illicit drug*** during the year reached their peaks in 1978 or 1979 (Figure 14), and generally have been falling since then.

- As noted earlier, a major factor in the rise of ***illicit drug use other than marijuana*** had been an increase in reported ***amphetamine*** use. The rise in amphetamine use appeared in all four regions; however, the rise in lifetime prevalence from 1978 to 1981 was only 6% in the South, whereas in the other regions the percentages all had risen between 9% and 12%. In essence, the South has been least affected by both the rise and the fall in reported amphetamine use.

- Over the longer term, ***cocaine*** use has shown very different trends in the four regions of the country leading to the emergence of the largest regional differences observed for any of the drugs (see Figure 15 for differences in lifetime prevalence trends). In the mid-seventies, there was relatively little regional variation in cocaine use. As the nation's cocaine epidemic grew in the late seventies, large regional differences emerged, so that by 1981 annual use had roughly tripled in the West and Northeast, nearly doubled in the

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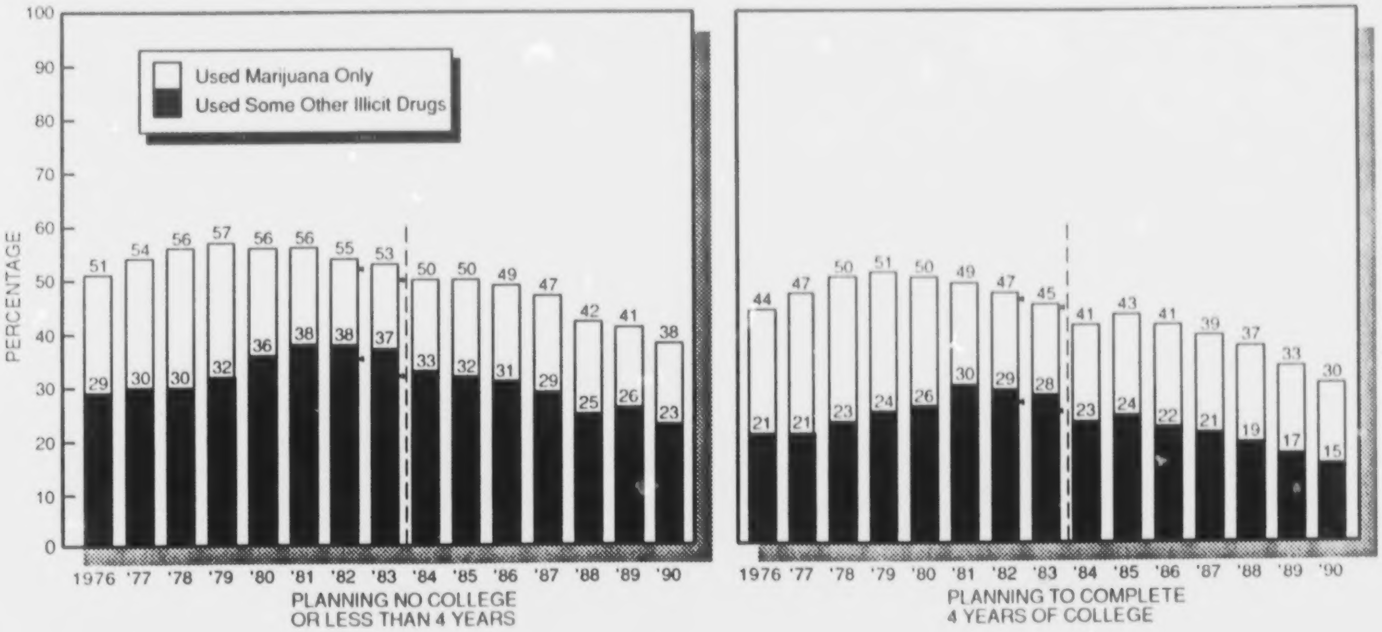
[13] Because of excessive missing data in 1975 on the variable measuring college plans, group comparisons are not presented for that year.

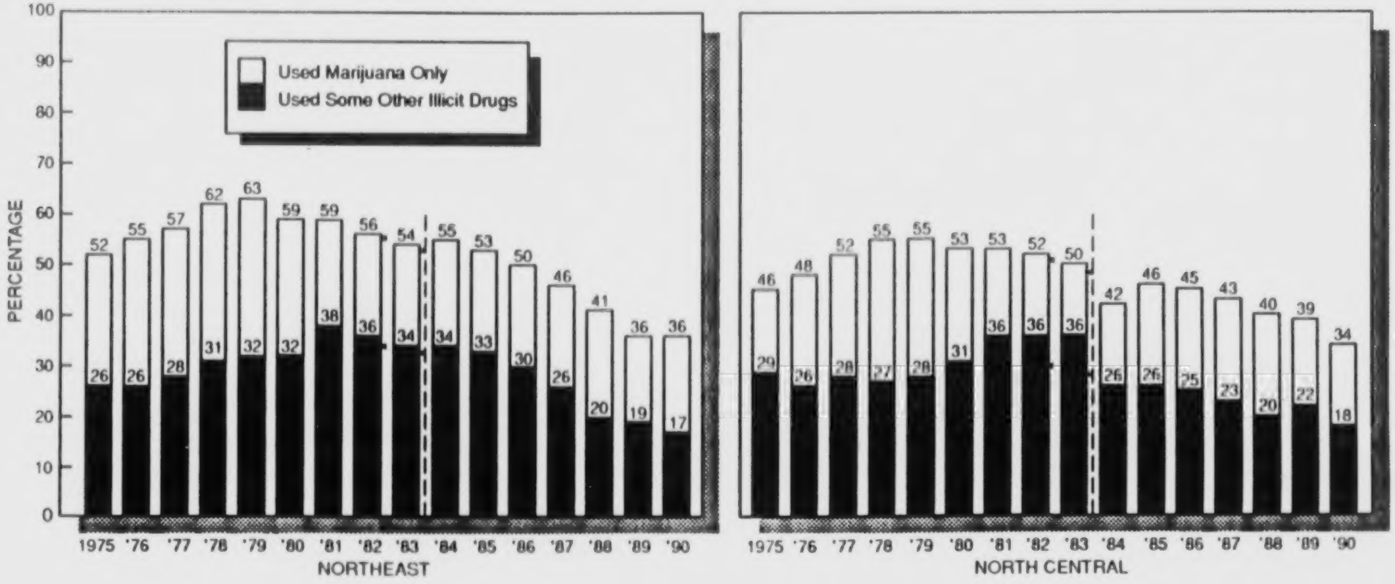
## FIGURE 13

### Trends in Seniors' Annual Prevalence of an Illicit Drug Use Index
by College Plans



NOTE: See Figure 8 for relevant footnotes.

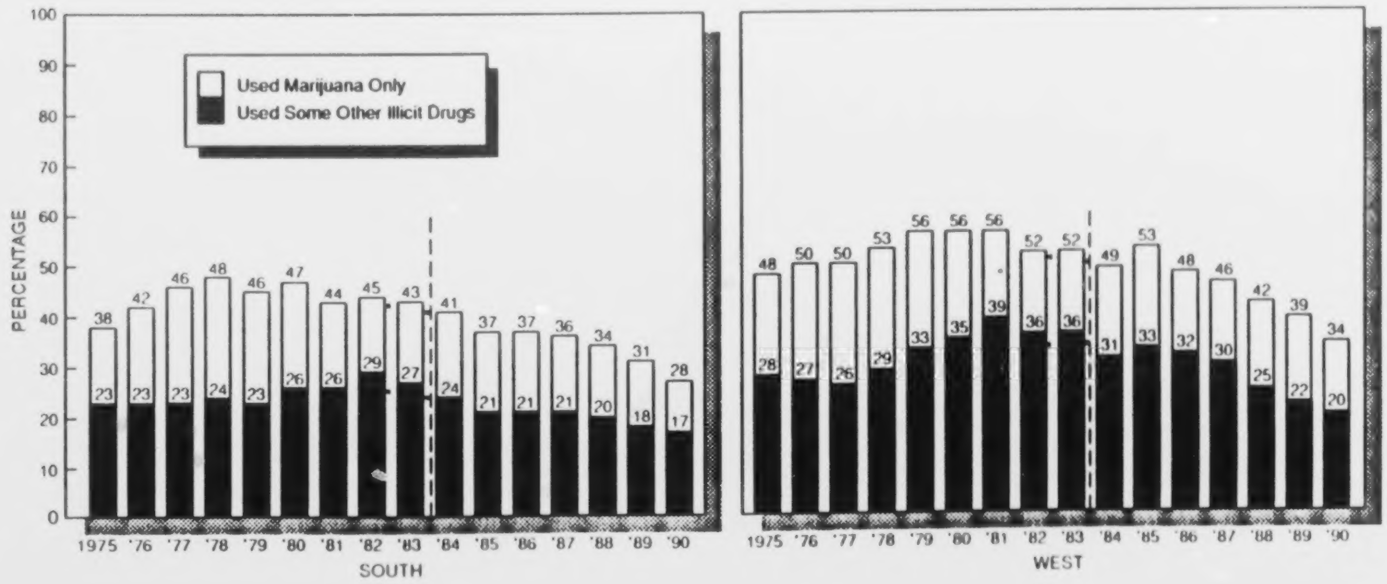
FIGURE 14
**Trends in Seniors' Annual Prevalence of an Illicit Drug Use Index**
by Region of the Country



NOTE: See Figure 8 for relevant footnotes.

## FIGURE 14 (cont.)

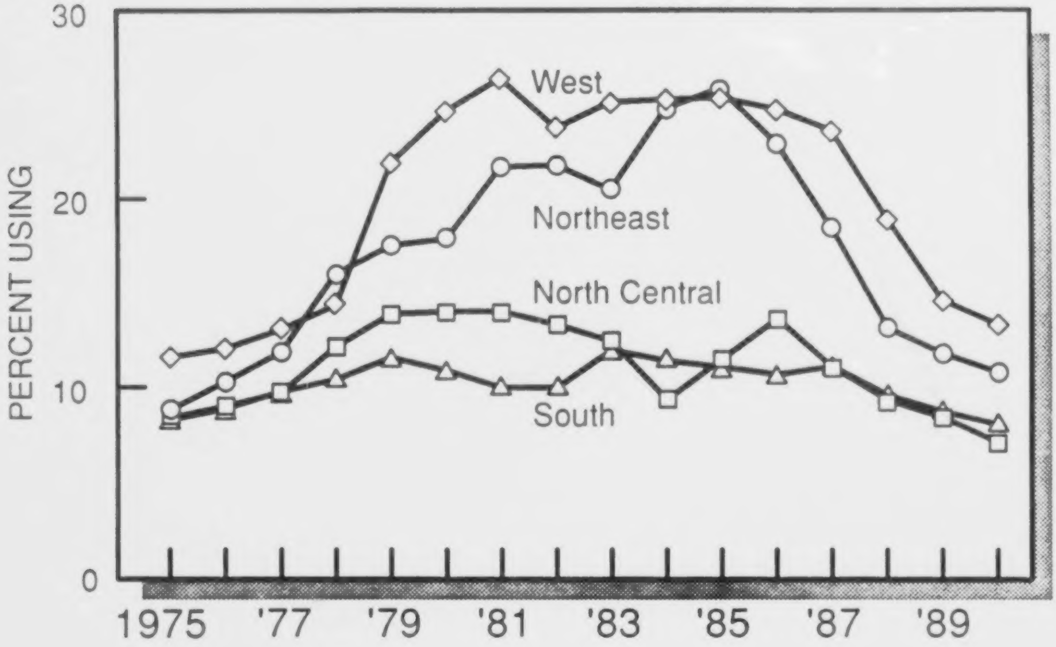
**Trends in Seniors' Annual Prevalence of an Illicit Drug Use Index**
by Region of the Country



NOTE: See Figure 8 for relevant footnotes.

FIGURE 15

**Trends in Seniors' Lifetime Prevalence of Cocaine Use**
by Region of the Country



North Central, and increased "only" by about 30% in the South. After 1981, this pattern of large regional differences—with the annual prevalence being higher in the West and Northeast than in the South and North Central—has remained for about six years. However, two particularly sharp declines in the Northeast since 1985 and in the West since 1987, are beginning to reduce these regional differences.

- ***Crack*** use dropped in all four regions in 1988 (the first year for which trend data were available) but by far the most in the West, which started out considerably higher than the other regions.

- Between 1975 and 1981, sizeable regional differences in ***hallucinogen*** use emerged, as use in the South dropped appreciably. In 1981, both the North Central and the West had annual rates that were about two and one-half times higher than the South (10.3%, 10.4%, and 4.1%, respectively), and the Northeast was three times as high (12.9%). After 1981, hallucinogen use dropped appreciably in all regions except the South, practically eliminating previous regional differences.

- Between 1980 and 1982, ***PCP*** use dropped precipitously in all regions, though the drop was greatest in the Northeast which in 1980 had a usage rate roughly double that of all the other regions. In general, PCP use has remained low (and without much regional difference).

- Regarding ***alcohol***, all four regions have shown a decline in current drinking and in occasions of heavy drinking since the early 80's.

### *Trend Differences Related to Population Density*

- There was a peaking in 1979 in the proportions using ***any illicit drug*** in all three levels of community size (Figure 16). Although the smaller metropolitan areas and the nonmetropolitan areas never caught up completely with their larger counterparts, they did narrow the gap some between 1975 and 1979. Most of that narrowing was due to changing levels of marijuana use, and most of it occurred prior to 1978.

  Since 1979, there had been a fairly steady decrease in all three groupings on community size—until 1985, when the metropolitan areas remained level and the nonmetropolitan areas showed a slight rise. In 1986 all three showed the resumption of a gradual decline.

- The overall proportion involved in ***illicit drugs other than marijuana*** also has peaked in communities of all sizes in 1981 or 1982. Up to 1981, the proportions reporting the use of some illicit drug other than marijuana in the last 12 months had been increasing continuously (over a four-year period in the very large cities, and over a three-year period in the smaller metropolitan and nonmetropolitan areas). Almost all of this increase is attributable to the rise in reported amphetamine use (which likely is artifactual in part). Since 1983 there has been a fair-sized decline in all three groups in the use of illicit drugs other than marijuana—again largely attributable to changes in amphetamine use and later to changes in cocaine use. In part, in recent years the large metropolitan areas have shown lower rates than the other two strata—a reversal of earlier differences.

- For a number of the individual classes of drugs, there has emerged a narrowing of previous differences as they have been in a decline phase, much as there was an emergence of those differences during their incline phases. Figure 17 shows the trends for annual prevalence of alcohol, marijuana, and cocaine.

- The increase in ***cocaine*** use between 1976 and 1979, although dramatic at all levels of urbanicity, was clearly greatest in the large cities. Between 1980 and 1984, use was fairly stable in all groupings, and in 1985 they all showed a rise in annual prevalence. in 1986 they all stabilized again, and in 1987, began a decline that continues today. However, just as the earlier rise had been greatest in the large cities, so was the drop from 1987 to 1990 (see Figure 17).

- ***Crack***, measured for the first time in 1986 (annual prevalence) or 1987 (lifetime prevalence), has shown the largest declines in the large cities. For example, lifetime prevalence in the large cities is down by 3.7% (from 6.6% in 1987 to 2.9% in 1990); in the smaller metropolitan areas, the decline is 1.5% (from 5.3% to 3.8%), and in the nonmetropolitan areas, the decline is 1.4% (from 4.6% to 3.2%).

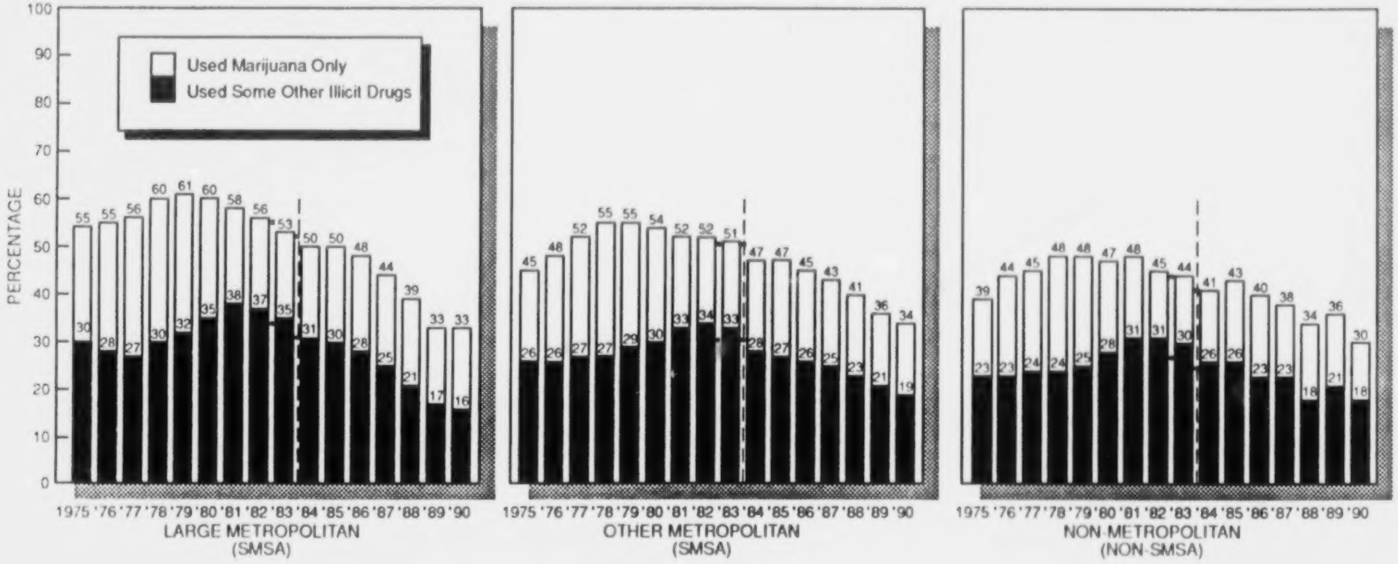
- There is evidence of a decline in current ***alcohol*** use in the large cities in recent years—one which has narrowed the differences considerably. For example, 30-day prevalence in the large cities is down by 19%, from 78% in 1980 to 59% in 1990; during the same interval, the smaller metropolitan areas decreased 13% (from 71% to 57%), and the nonmetropolitan areas dropped 15% (from 69% to 54%).

- Differences related to community size have also narrowed some in the cases of ***LSD*** (since 1981) due to a greater amount of decrease in the large cities and other cities than in the nonmetropolitan areas (which started out considerably lower). A similar thing has happened for ***PCP***, as well.

- ***Marijuana*** use has also shown evidence of convergence among the three urbanicity groups in recent years (Figure 17). Use has consistently been positively correlated with community size, with the differences being greatest in the peak year of usage, 1978. Since

FIGURE 16

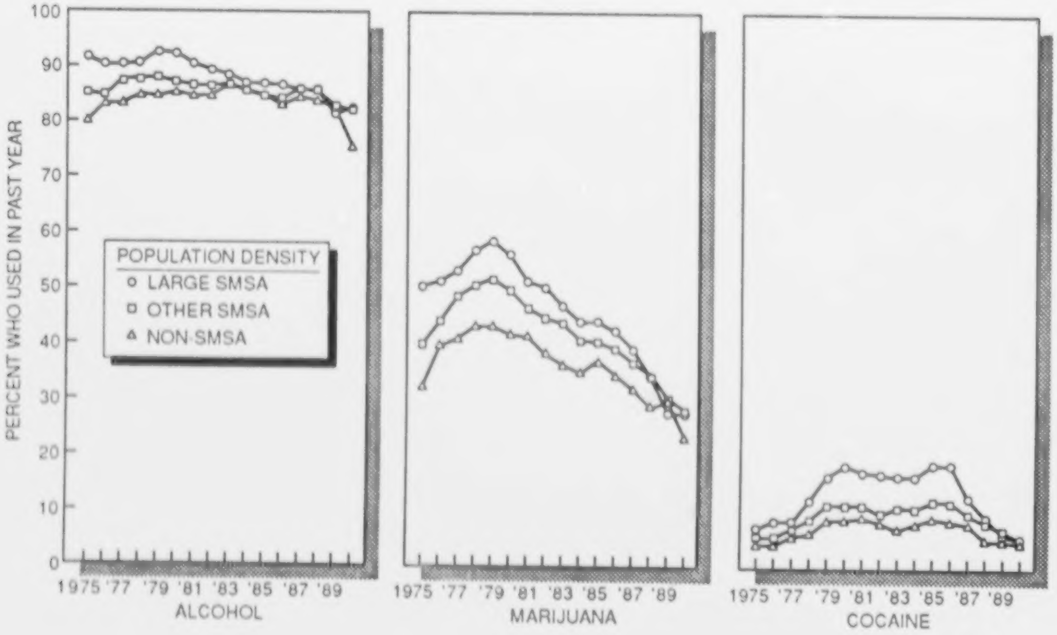
**Trends in Seniors' Annual Prevalence of an Illicit Drug Use Index**
by Population Density



NOTE: See Figure 8 for relevant footnotes.

## FIGURE 17

### Trends in Seniors' Annual Prevalence of Alcohol, Marijuana, and Cocaine Use
by Population Density



then both the absolute and proportional differences have been diminishing as the more urban areas have exhibited a greater decline.

- In the last half of the seventies, the use of ***opiates other than heroin*** was consistently highest in the large metropolitan areas and lowest in the nonmetropolitan areas. However, in recent years, there has been no consistent difference among these groups.

- The remaining drugs show little systematic variation in trends related to population density.

## Chapter 6

# USE AT EARLIER GRADE LEVELS

While the present study to date has not encompassed grades below twelve (starting in 1991 it will), clearly much of the substance use observable among seniors began at earlier points in their lives. By asking seniors when they first began to use each different type of drug, we can monitor their earlier drug involvement retrospectively.

Age of onset information is an important consideration for a number of reasons. Perhaps its major value is in the planning of school prevention curricula, the design of which should be informed by the typical ages of onset for the various types of drugs (including cigarettes and alcohol). Because these typical ages may change over time, and because shifts may differ by type of drug, it also is important for planning purposes to monitor these indicators on an ongoing basis. In addition to this use, age of onset information is important simply as an indicator of the extent to which drug use has spread down to the elementary and junior high grades. Looked at over time, it can also show whether trends in lifetime prevalences in the lower grades do or do not parallel the trends we are observing among seniors. In this chapter, then, we discuss the grade levels at which the most recent senior class began to use each of the various drugs, as well as the trends in those patterns which show up in the grade of first use data from all senior classes since the class of 1975.

## INCIDENCE OF USE BY GRADE LEVEL

The questions asking in what grade the respondent first used each class of drug are contained in three[14] of the questionnaire forms used in the study, with a few exceptions, yielding a sample of about 6,900 cases. Table 17 presents for each of the major drug classes the percent of the class of 1990 who initiated use at each grade level.

- For ***cigarettes*** and ***alcohol***, most of the initial experience takes place before high school. For example, in the Class of 1990, 19% of the seniors reported smoking their first cigarette in elementary school, with another 32% starting in grades 7-9. Only another 14% first tried smoking in high school. Regular daily cigarette smoking was begun by 12% prior to tenth grade vs. 10% in high school (i.e., in grades 10 through 12). The figures for initial use of alcohol are 60% prior to and 29% during high school. In fact, 40% say they had been drunk prior to 10th grade.

- Use of ***inhalants*** (unadjusted) was initiated by roughly two-thirds (12%) before tenth grade vs. 6.3% after.

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[14] Sometimes 1, 2, 3, or 4 forms in 1990.

## TABLE 17

## Incidence of Use for Various Types of Drugs, by Grade
## Class of 1990

(Entries are percentages)

| Grade in which drug was first used: | Marijuana | Inhalants[a] | Amyl/Butyl Nitrites | Hallucinogens[a] | LSD | PCP | Cocaine | Heroin | Other Opiates | Stimulants[b] (adjusted) | Barbiturates | Methaqualone | Tranquilizers | Alcohol | Getting Drunk | Cigarettes | Cigarettes (daily) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 6th | 2.8 | 2.8 | 0.1 | 0.2 | 0.2 | 0.1 | 0.2 | 0.0 | 0.5 | 0.9 | 0.2 | 0.1 | 0.3 | 10.8 | 4.2 | 18.7 | 1.6 |
| 7-8th | 10.1 | 6.3 | 0.2 | 0.9 | 0.9 | 0.3 | 1.1 | 0.3 | 1.2 | 3.8 | 2.0 | 0.7 | 1.4 | 26.9 | 17.0 | 22.2 | 5.9 |
| 9th | 9.4 | 2.7 | 0.5 | 2.1 | 1.8 | 0.6 | 1.5 | 0.3 | 1.4 | 4.0 | 1.3 | 0.5 | 1.2 | 22.3 | 18.4 | 9.9 | 4.9 |
| 10th | 8.6 | 2.1 | 0.6 | 2.3 | 2.1 | 0.8 | 2.3 | 0.3 | 2.1 | 3.5 | 1.5 | 0.4 | 1.4 | 15.4 | 13.8 | 6.5 | 4.1 |
| 11th | 6.2 | 2.3 | 0.2 | 2.2 | 2.2 | 0.5 | 2.9 | 0.2 | 1.9 | 3.1 | 1.1 | 0.3 | 1.7 | 9.5 | 9.5 | 4.7 | 3.9 |
| 12th | 3.6 | 1.9 | 0.4 | 1.6 | 1.4 | 0.4 | 1.3 | 0.2 | 1.2 | 2.2 | 0.7 | 0.3 | 1.2 | 4.5 | 5.4 | 2.3 | 1.7 |
| Never used | 59.3 | 82.0 | 97.9 | 90.6 | 91.3 | 97.2 | 90.6 | 98.7 | 91.7 | 82.5 | 93.2 | 97.7 | 92.8 | 10.5 | 31.7 | 35.6 | 78.0 |

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NOTE: Percents are based on three of the six forms (N = approximately 6900) except for cocaine which is based on four of the six forms (N = approximately 9200), inhalants which is based on two of the six forms (N = approximately 4600), and PCP and nitrites which are based on one of the six forms (N = approximately 2300).

[a] Unadjusted for known underreporting of certain drugs. See text for details.

[b] Based on the data from the revised question, which attempts to exclude the inappropriate reporting of non-prescription stimulants.

For most of the other illicit drugs, between 35% and 57% of the eventual users (i.e., those who had used by the end of twelfth grade) initiated use prior to tenth grade; ***marijuana***, ***barbiturates***, ***methaqualone***, ***psychedelics other than LSD***, ***amphetamines***, ***PCP***, ***tranquilizers***, ***nitrites*** and ***opiates other than heroin*** fall in this category. A substantial minority—between one-quarter and one-third—initiate use prior to tenth grade among eventual users of ***cocaine*** and ***LSD***.

- For ***marijuana***, about half of the users initiate before high school; 22% prior to and 18% during high school (see Table 17).

- ***Cocaine*** presents a contrasting picture to nearly all other drugs in that initiation rates do not become very appreciable until high school; only 30% of eventual users in the class of 1990 initiated use prior to tenth grade.

## TRENDS IN USE AT EARLIER GRADE LEVELS

Using the retrospective data provided by members of each senior class concerning their grade at first use, it is possible to reconstruct lifetime prevalence trend curves for lower grade levels over earlier years. Obviously, data from dropouts from school are not included in any of the curves. Figures 18a through 18r show the reconstructed lifetime prevalence curves for earlier grade levels for a number of drugs.

- Figure 18a provides the trends at each grade level for lifetime use of ***any illicit drug***. It shows that for all grade levels there was a continuous increase in illicit drug involvement through the seventies. The increase is fortunately quite small for use prior to seventh grade; only 1.1% of the class of 1975 reported having used an illicit drug in 6th grade or below (which was in 1969 for that class), but the figure has increased modestly, and for the class of 1990 is at 3.7% (which was in 1984 for that class). The lines for the other grade levels all show much steeper upward slopes. For example, about 52% of the class of 1982 had used some illicit drug by the end of grade 10, compared to 37% of the class of 1975. It has fallen back to 36% for the class of 1990.

- Beginning in 1980 there was a leveling off at the high school level (grades 10, 11, and 12) in the proportion becoming involved in illicit drugs. The leveling in the lower grades came about a year earlier.

- Most of the increase in any illicit drug use was due to increasing proportions using marijuana. We know this from the results in Figure 18b showing trends for each grade level in the proportion having used ***any illicit drug other than marijuana*** in their lifetime. Compared to Figure 18d for marijuana use, these trend lines are relatively flat throughout the seventies and, if anything, began to taper off among ninth and tenth graders between 1975 and 1977. The biggest cause of the increases in these curves from 1978 to 1981 was the rise in reports of amphetamine use. As noted earlier, we suspect that at least some of this rise is artifactual. If amphetamine use is removed from the calculations, even greater stability is shown in the proportion using ***illicits other than marijuana or amphetamines***. (See Figure 18c.)

- As can be seen in Figure 18d, for the years covered across the decade of the 70's, ***marijuana*** use had been rising steadily at all grade levels down through the seventh-eighth grades. Beginning in 1980, lifetime prevalence for marijuana began to decline for grades 9 through 12. Declines in grades 7 and 8 began a year later, in 1981.

  There was also some small increase in marijuana use during the 1970's at the elementary level (that is, prior to seventh grade). Use by sixth grade or lower rose gradually from 0.6% for the class of 1975 (who were sixth graders in 1968–69) to a peak of 4.3% in the class of 1984 (who were sixth graders in 1977–78). Use began dropping thereafter and in 1990 is down to 2.8%. Results from the five recent national household surveys currently available from NIDA suggest that this relatively low level of use among this age group continues to hold true: the proportion of 12 to 13 year olds reporting any experience with marijuana was 6% in 1971: 8% in 1977, 1979, and 1982; 6% again in 1985; and 4% in 1988. Presumably sixth graders would have even lower absolute rates, since the average age of sixth graders is less than twelve.[15]

- ***Cocaine*** use at earlier grade levels is given in Figure 18e. One clear contrast to the marijuana pattern is that most initiation into cocaine use takes place in the last two or three years of high school (rather than earlier, as is the case for marijuana). Further, most of the increase in cocaine experience between 1976 and 1980 occurred in the 11th and 12th grades, not below. After 1980, experience with cocaine generally remained fairly level until after 1986, when eleventh and twelfth graders began to show a significant decline.

- The lifetime prevalence statistics for ***stimulants*** peaked briefly for grade levels 9 through 12 during the mid-70's. (See Figure 18f.) However, it showed a sharp rise in the late 70's at virtually all grade levels. As has been stated repeatedly, we believe that some—perhaps most—of this recent upturn is artifactual in the sense that nonprescription stimulants account for much of it. However, regardless of what accounts for it, there was a clear upward secular trend—that is, one observed across all cohorts and grade levels—beginning in 1979. The unadjusted data from the class of 1983 give the first indication of a reversal of this trend. The adjusted data from the classes of 1982 through 1990 suggest that the use of stimulants leveled around 1982 and has fallen appreciably since in grades 9 through 12. There is less evidence of a decline in lifetime prevalence among 7th and 8th graders.

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[15] See Miller, J.D., Cisin, I.H., Gardner-Keaton, H., Harrell, A.V., Wirtz, P.W., Abelson, H.I., Fishburne, P.M. (1983). *National survey on drug abuse: Main findings 1982*. Rockville, MD: National Institute on Drug Abuse; National Institute on Drug Abuse (1988). *National Household Survey on drug abuse: Main findings 1985*. Rockville, MD: National Institute on Drug Abuse; and, National Institute on Drug Abuse (1990). *National Household Survey on drug abuse: Main findings 1988*. Rockville, MD: National Institute on Drug Abuse.

- Lifetime prevalence of ***hallucinogen*** use (unadjusted for underreporting of PCP) began declining among students at most grade levels in the mid-1970's (Figure 18g), and this gradual decline continued through the mid-1980's, reaching low points at several grade levels for the class of 1986. Recent classes have shown some fluctuations, but the class of 1990 is very similar to the class of 1986 in incidence rates for the various grade levels. Trend curves for ***LSD*** (Figure 18h) are similar in shape (though at lower rates, of course), except that recent classes have shown definite increases in incidence rates. (Incidence rates for ***psychedelics other than LSD*** (data not shown) have shown some decreases in incidence rates in recent classes, resulting in little net change between the classes of 1986 and 1990 in overall hallucinogen incidence rates.)

- While there is less trend data for ***PCP***, since questions about grade of first use of ***PCP*** were not included until 1979, some interesting results emerge. A sharp downturn began around 1979 (see Figure 18i), and use has declined in all grade levels since, though proportionately more in the upper grades. Thus, if the hallucinogen figure (18g) were adjusted for underreporting of PCP use, it would be showing even more downturn in recent years.

- Questions about age at first use for ***inhalants*** (unadjusted for the nitrites) have been asked only since 1978. The retrospective trend curves (Figure 18j) suggest that during the mid-1970's, experience with inhalants decreased slightly for most grade levels and then began to rise again. For the upper grade levels there has been a continued gradual rise since 1980 in lifetime prevalence, whereas the curves have been more uneven in the lower grades. However, the trend data on use by senior year (see Figure 9d), which *have* been adjusted for the underreporting of nitrites, suggest that some of the rise in recent years is an artifact resulting from the inappropriate exclusion of nitrite inhalants in earlier years.

- Since grade-at-first-use data have been gathered for the ***nitrites*** beginning in 1979, only limited retrospective data exist (Figure 18k). These do not show the recent increase observed for the overall inhalant category. Instead they show a substantial, though somewhat halting, decline. Because their use level has gotten so low, their omission by respondents from their reports of overall inhalant use has much less effect on the latter in recent years than it did when nitrite use was more common.

- As the graphs for the two subclasses of sedatives—barbiturates and methaqualone—show, the trend lines have been quite different for them at earlier grade levels as well as in twelfth grade (see Figures 18l and 18m). Since about 1974 or 1975, lifetime prevalence of ***barbiturate*** use had fallen off sharply for the upper grade levels for all classes until the late 70's; the lower grades showed some increase in the late 70's (perhaps reflecting the advent of some look-alike drugs) and in the mid-80's all grades resumed the decline. Most recently there is some leveling in the rates.

  During the mid-70's ***methaqualone*** use started to fall off at about the same time as barbiturate use in nearly all grade levels, but dropped rather little and then flattened. Between 1978 and 1981 there was a fair resurgence in use in all grade levels; but since 1982 there has been a sharp and continuing decline.

- Lifetime prevalence of ***tranquilizer*** use (Figure 18n) also began to decline at all grade levels in the mid-70's. It is noteworthy that, like sedatives, the overall decline in tranquilizer use has been considerably greater in the upper grade levels than the lower ones. Overall, it would appear that the tranquilizer trend lines have been following a similar course to that of barbiturates. So far, the curves are different only in that tranquilizer use has continued a steady decline among eleventh and twelfth graders since 1977, while barbiturate use had its decline interrupted for awhile in the early 80's.

- Though difficult to see in Figure 18o, the ***heroin*** lifetime prevalence figures for grades 9 through 12 all began declining in the mid-1970's, then leveled, and show no evidence of reversal as yet.

- The lifetime prevalence of use of ***opiates other than heroin*** has remained relatively flat at all grade levels since the mid-70's with perhaps a little increase prior to grade 10 (Figure 18p).

- Figure 18q presents the lifetime prevalence curves for cigarette smoking on a daily basis. It shows that initiation to ***daily smoking*** was beginning to peak at the lower grade levels in the early to mid-1970's. This peaking did not become apparent among high school seniors until a few years later. In essence, these changes reflect in large part cohort effects—changes which show up consistently across the age band for certain class cohorts. Because of the highly addictive nature of nicotine, this is a type of drug-using behavior in which one would expect to observe enduring differences between cohorts if any are observed at a formative age. The classes of 1982 and 1983 showed some leveling of the previous decline, but the classes of 1984 through 1986 showed an encouraging resumption of the decline while they were in earlier grade levels. The data from the classes of 1987 and 1988 showed a pause in the decline, and the class of 1988 was just about even with the class of 1986.

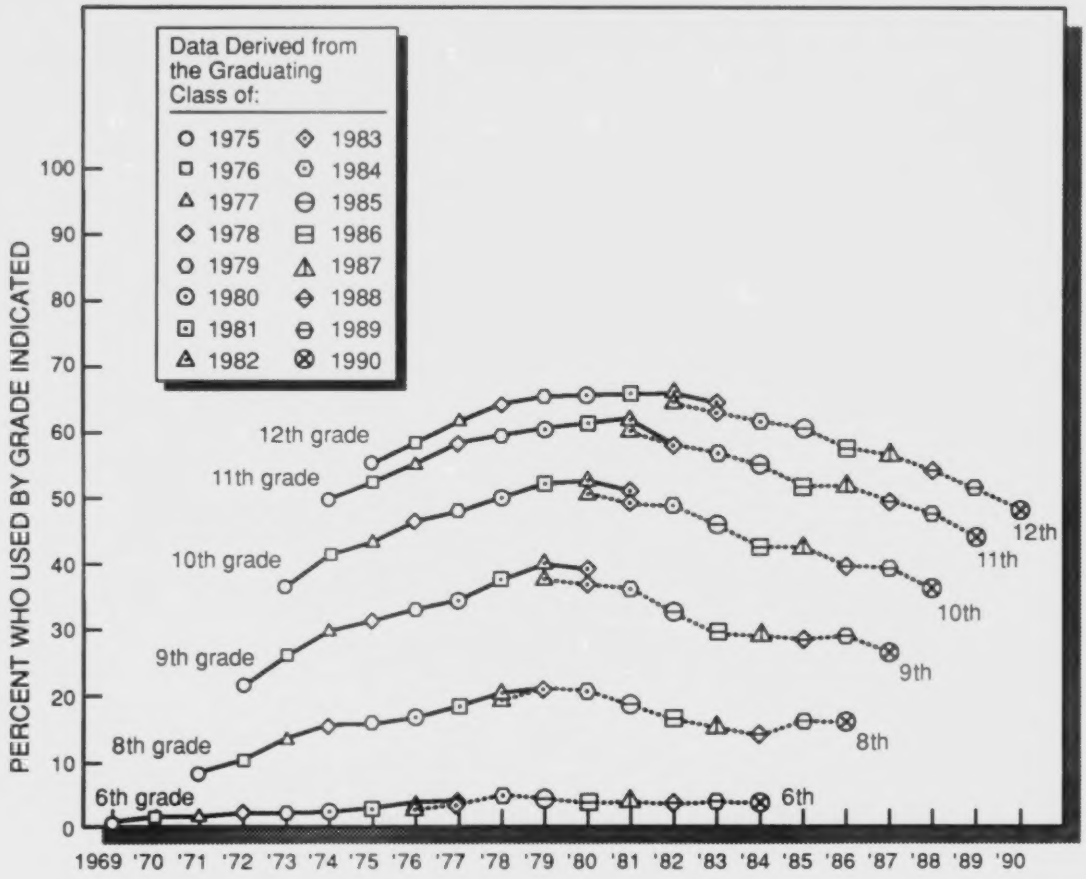
The classes of 1989 and 1990 have unfortunately not declined further, and have actually increased their prevalence of daily cigarette use at all grade levels from 8 through 12.

- The curves for lifetime prevalence of ***alcohol*** at grades 11 and 12 (Figure 18r) are very flat, reflecting little change over more than a decade. At the 7–10th grade levels, the curves show slight upward slopes in the early 1970's, indicating that compared to the earlier cohorts (prior to the class of 1978), more recent classes initiated use at earlier ages. There was additional upward trending in the mid-80's. Thus while 50% of the class of 1975 first used alcohol in ninth grade or earlier, 60% in the class of 1990 had done so. Females account for most of the change; 42% of females in the class of 1975 first used alcohol prior to tenth grade, compared to 56% in the class of 1990.

FIGURE 18a

## Use of Any Illicit Drug: Trends in Lifetime Prevalence for Earlier Grade Levels

Based on Retrospective Reports from Seniors

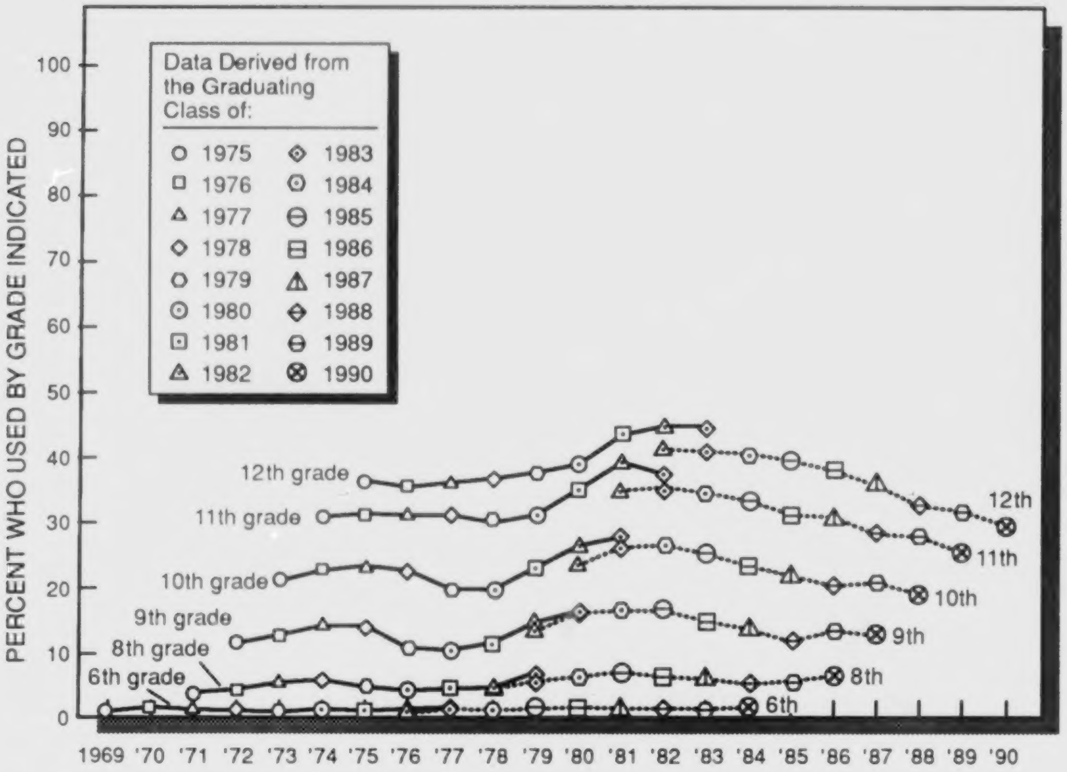


NOTE: The dotted lines connect percentages which result if non-prescription stimulants are excluded.

FIGURE 18b

### Use of Any Illicit Drug Other Than Marijuana: Trends in Lifetime Prevalence for Earlier Grade Levels

Based on Retrospective Reports from Seniors

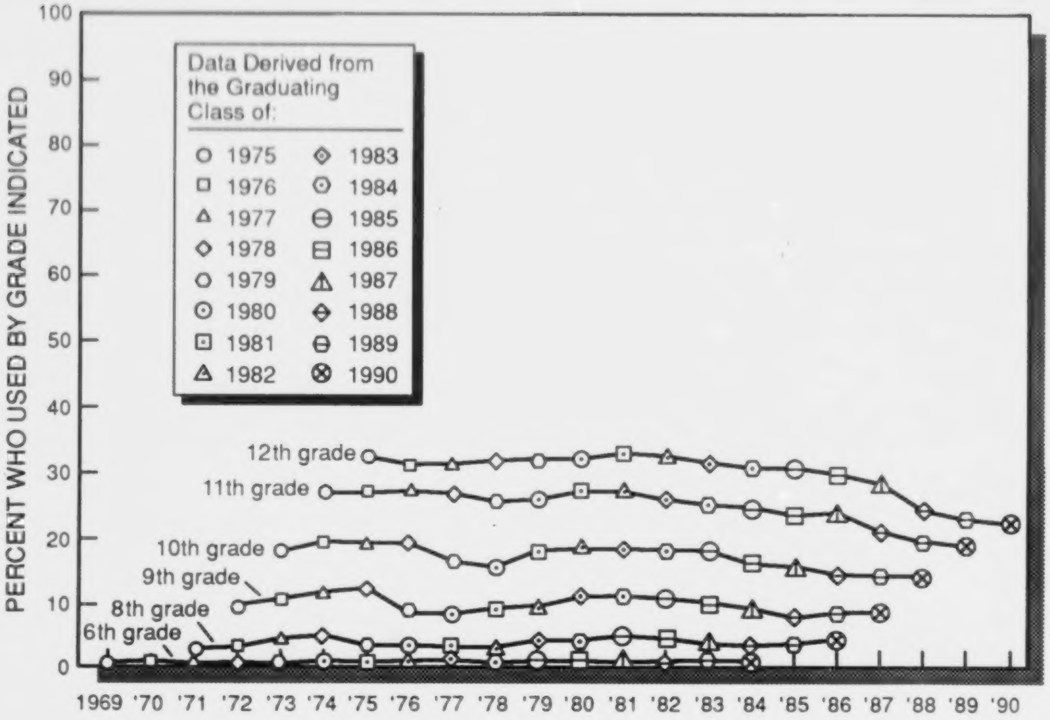


NOTE: The dotted lines connect percentages which result if non-prescription stimulants are excluded.

FIGURE 18c

**Use of Any Illicit Drug Other Than Marijuana or Amphetamines: Trends in Lifetime Prevalence for Earlier Grade Levels**

Based on Retrospective Reports from Seniors



## FIGURE 18d

### **Marijuana: Trends in Lifetime Prevalence for Earlier Grade Levels**
Based on Retrospective Reports from Seniors

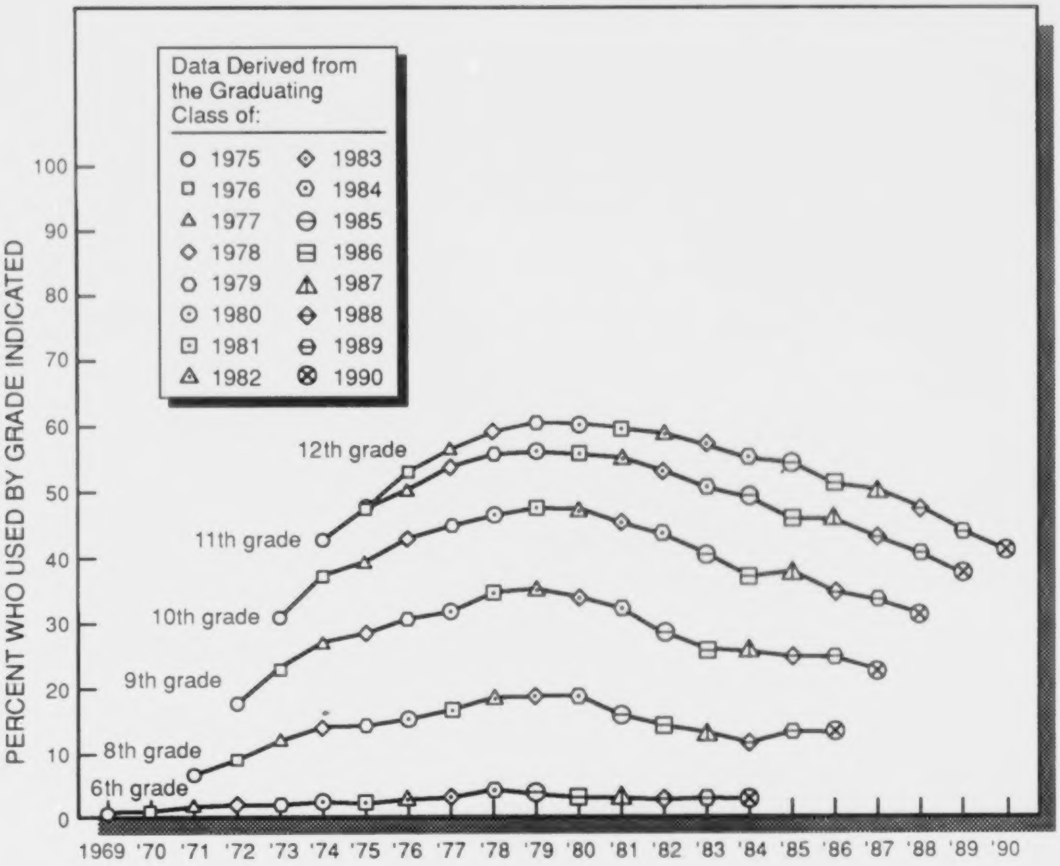


FIGURE 18e

**Cocaine: Trends in Lifetime Prevalence for Earlier Grade Levels**
Based on Retrospective Reports from Seniors

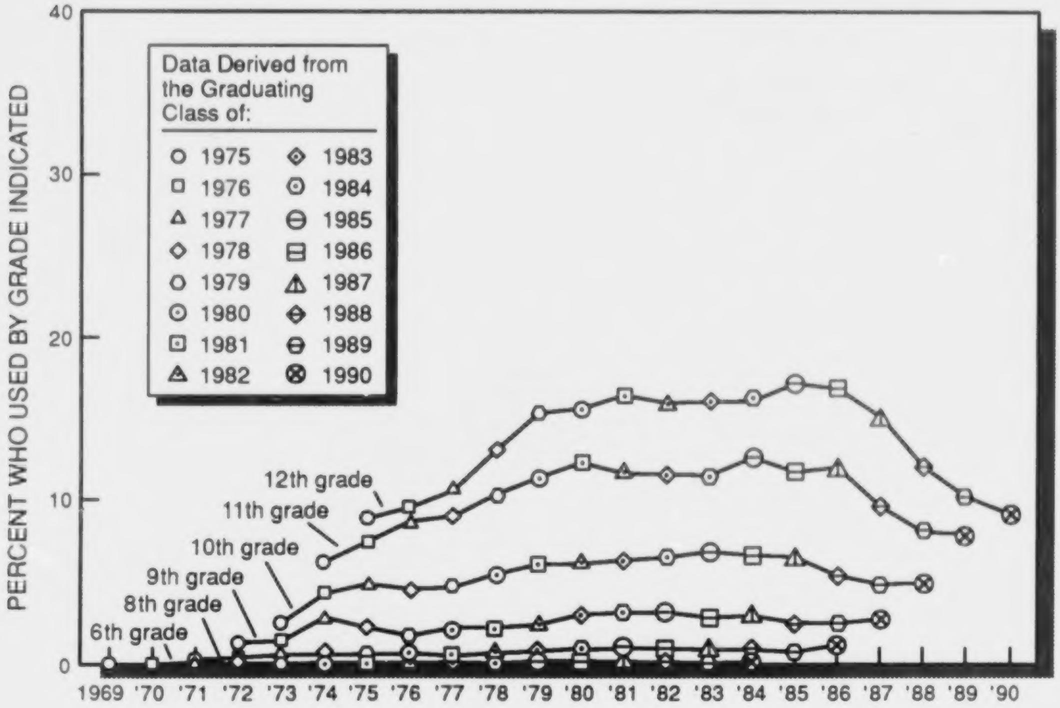
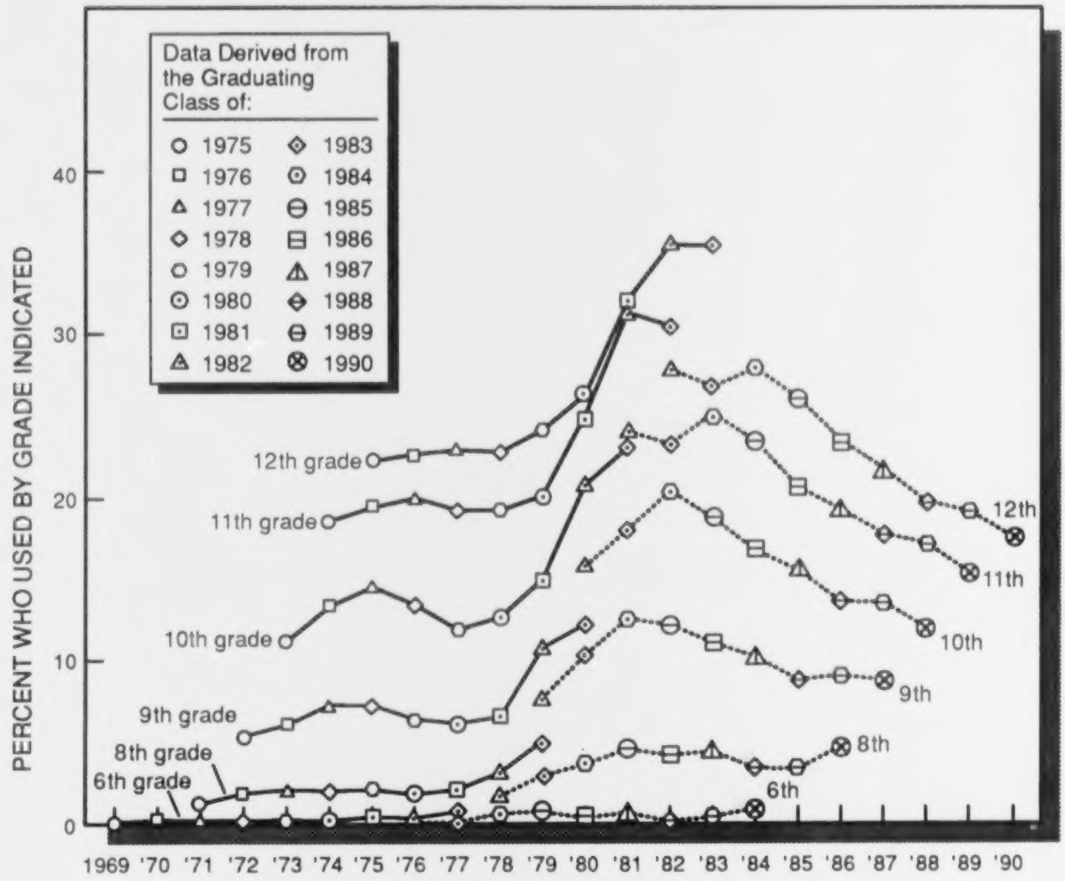


FIGURE 18f

**Stimulants: Trends in Lifetime Prevalence for Earlier Grade Levels**
Based on Retrospective Reports from Seniors



NOTE: The dotted lines connect percentages which result if non-prescription stimulants are excluded.

FIGURE 18g

**Hallucinogens: Trends in Lifetime Prevalence for Earlier Grade Levels**
Based on Retrospective Reports from Seniors

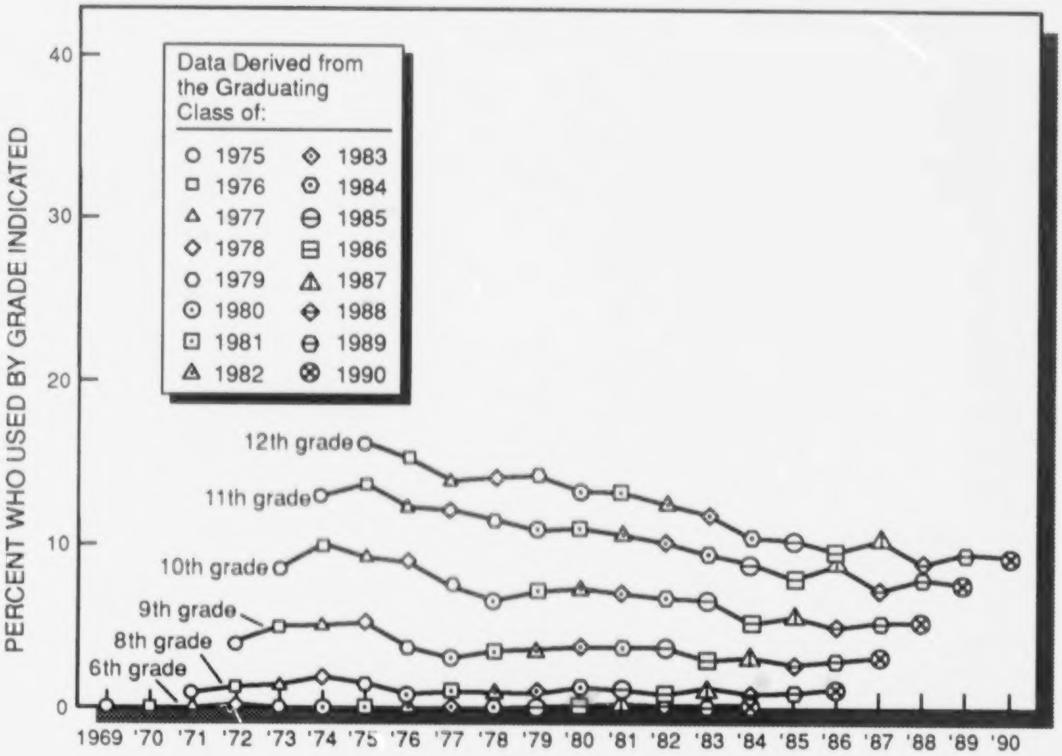


FIGURE 18h

**LSD: Trends in Lifetime Prevalence for Earlier Grade Levels**
Based on Retrospective Reports from Seniors

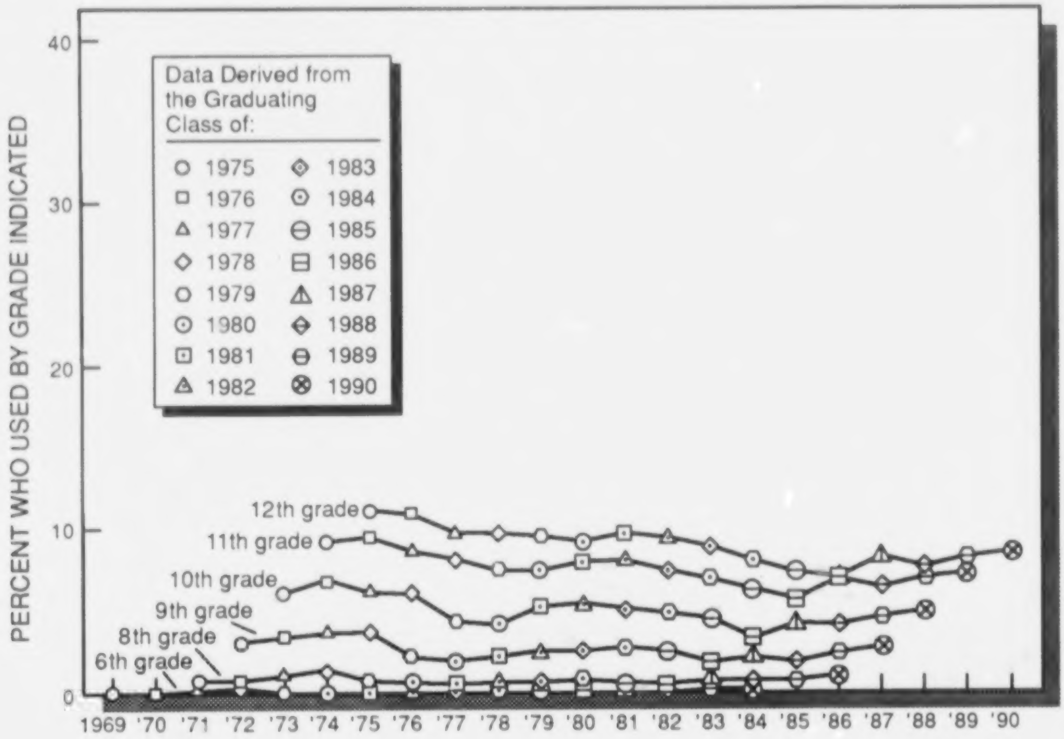


FIGURE 18i

**PCP: Trends in Lifetime Prevalence for Earlier Grade Levels**
Based on Retrospective Reports from Seniors

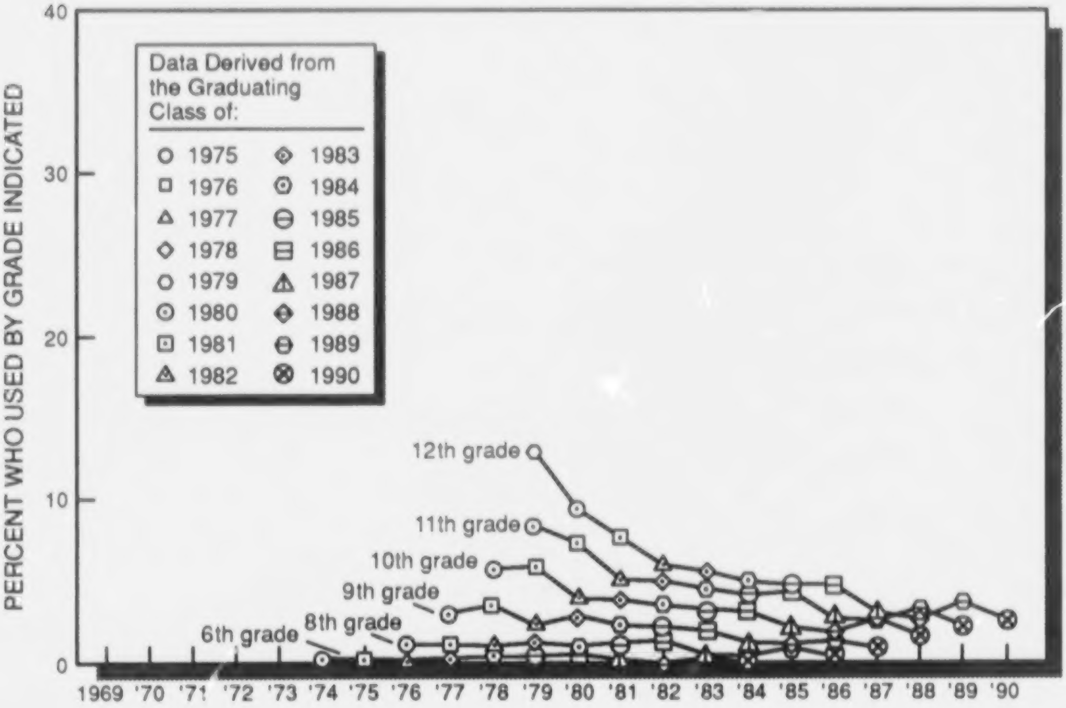


FIGURE 18j

**Inhalants: Trends in Lifetime Prevalence for Earlier Grade Levels**
Based on Retrospective Reports from Seniors

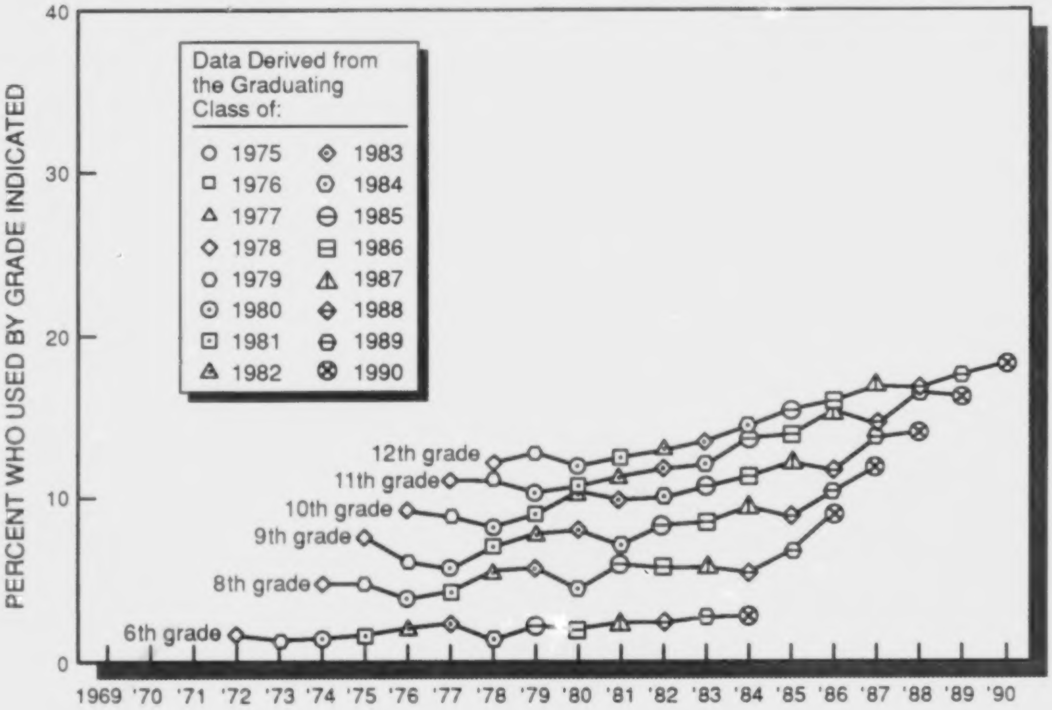


FIGURE 18k

**Nitrites: Trends in Lifetime Prevalence for Earlier Grade Levels**
Based on Retrospective Reports from Seniors

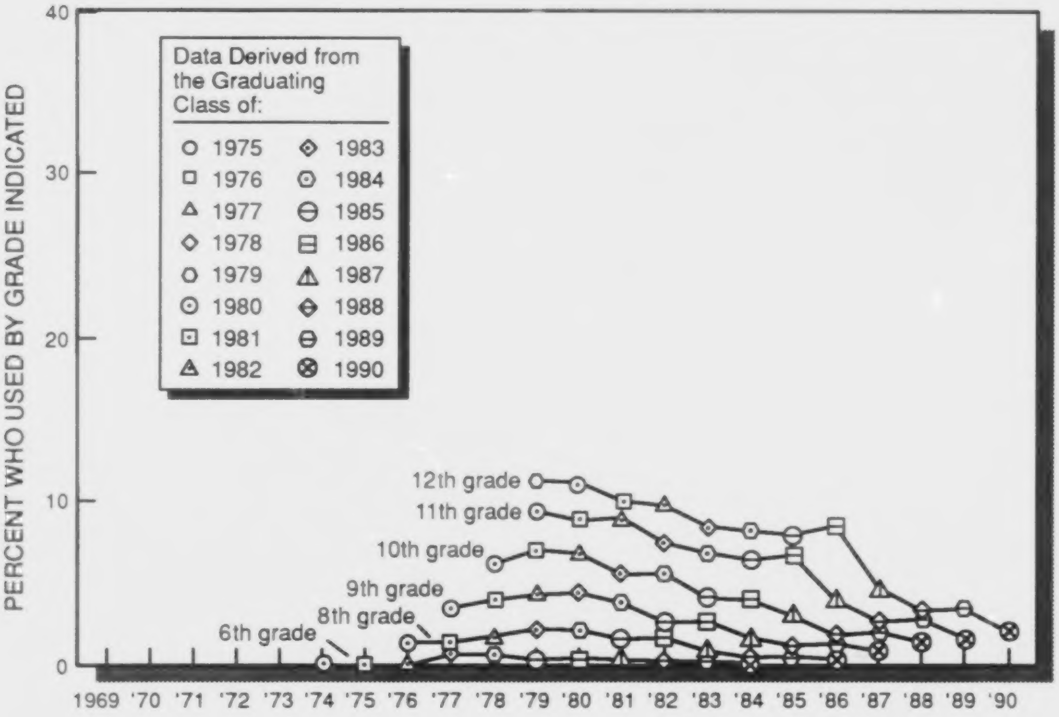


FIGURE 181

**Barbiturates: Trends in Lifetime Prevalence for Earlier Grade Levels**
Based on Retrospective Reports from Seniors

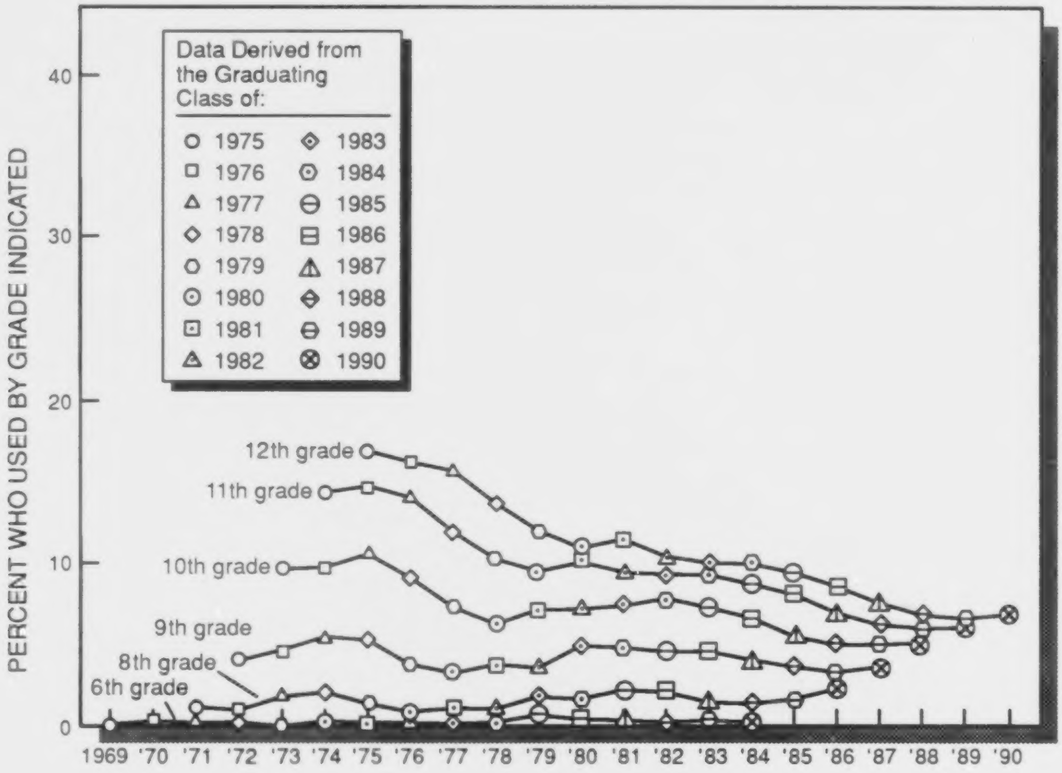


FIGURE 18m

**Methaqualone: Trends in Lifetime Prevalence for Earlier Grade Levels**
Based on Retrospective Reports from Seniors

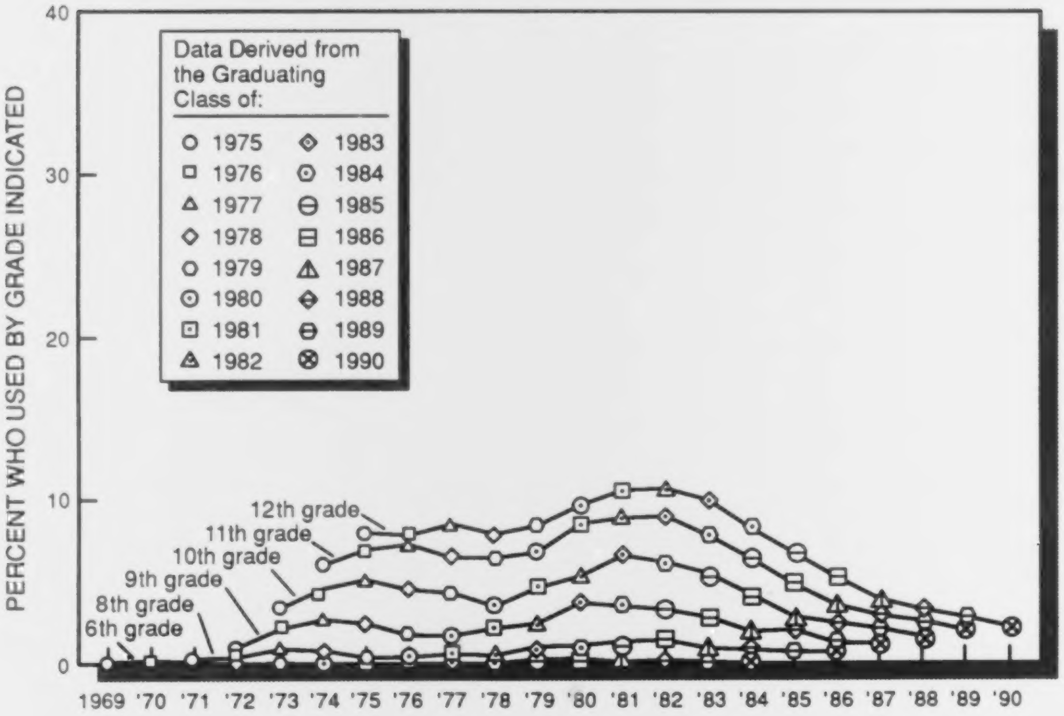


FIGURE 18n

**Tranquilizers: Trends in Lifetime Prevalence for Earlier Grade Levels**
Based on Retrospective Reports from Seniors

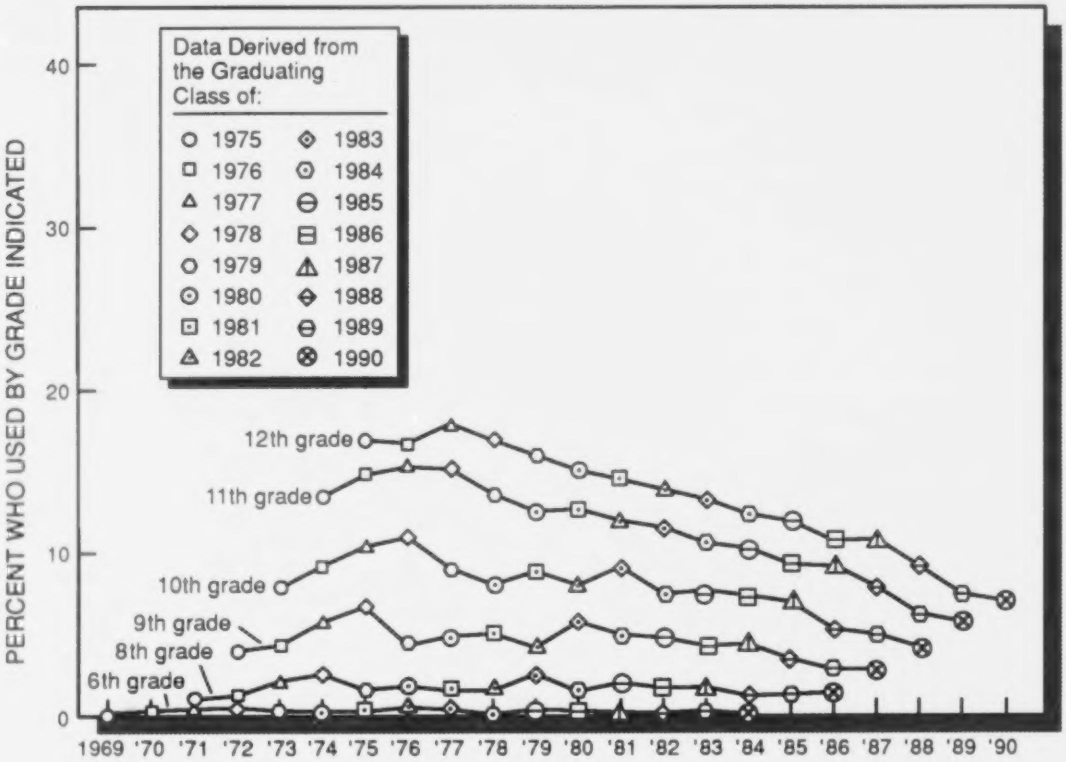


FIGURE 18o

## Heroin: Trends in Lifetime Prevalence for Earlier Grade Levels
Based on Retrospective Reports from Seniors

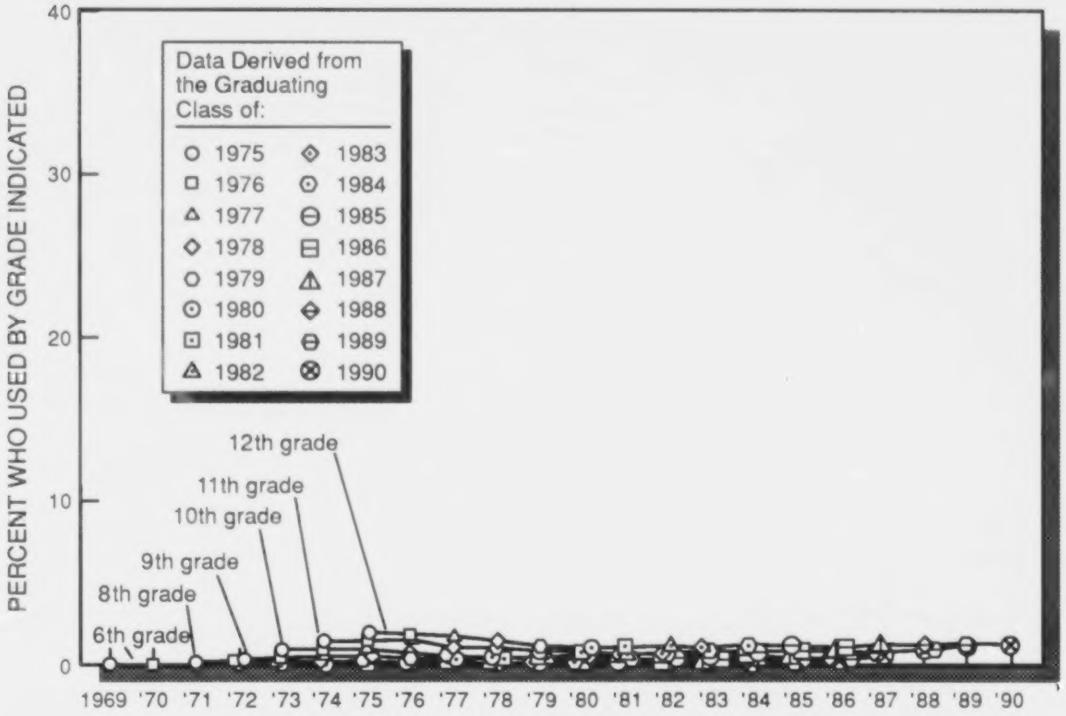


FIGURE 18p

**Other Opiates: Trends in Lifetime Prevalence for Earlier Grade Levels**
Based on Retrospective Reports from Seniors

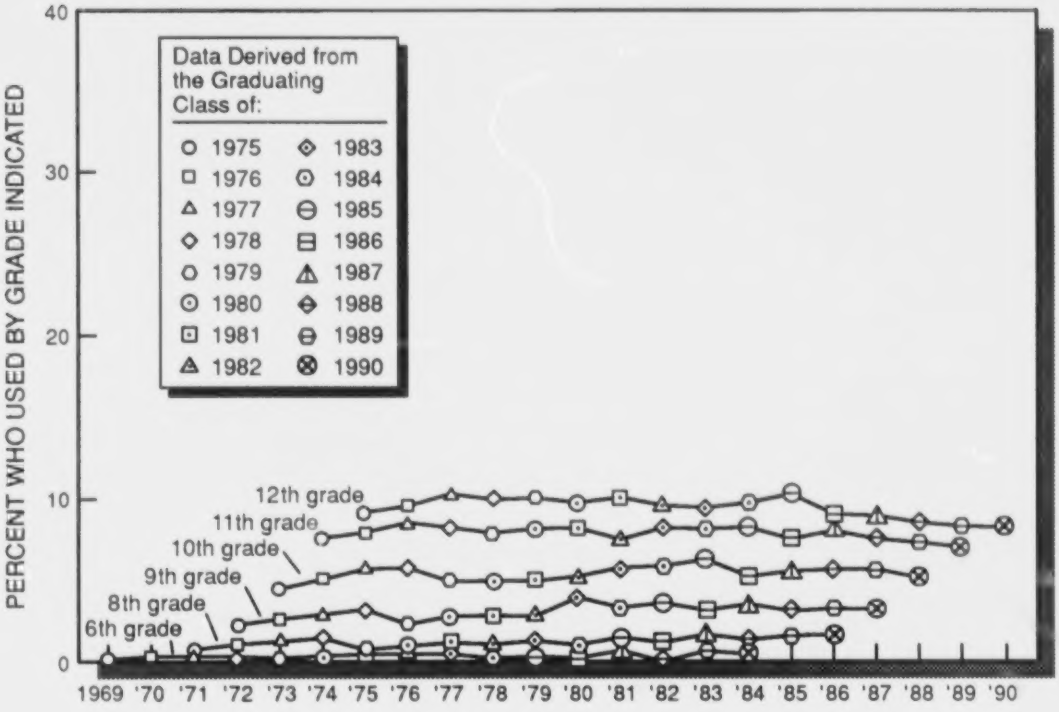


FIGURE 18q

**Cigarette Smoking on a Daily Basis: Trends in Lifetime Prevalence for Earlier Grade Levels**

Based on Retrospective Reports from Seniors

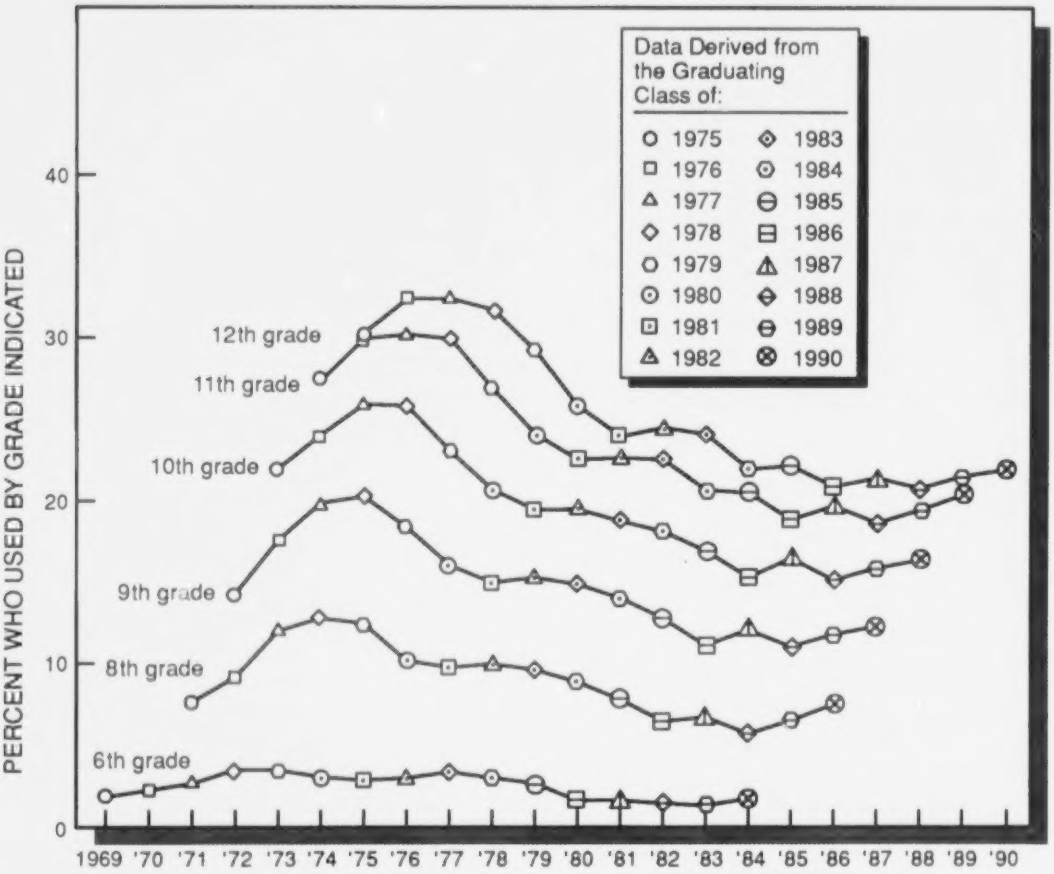
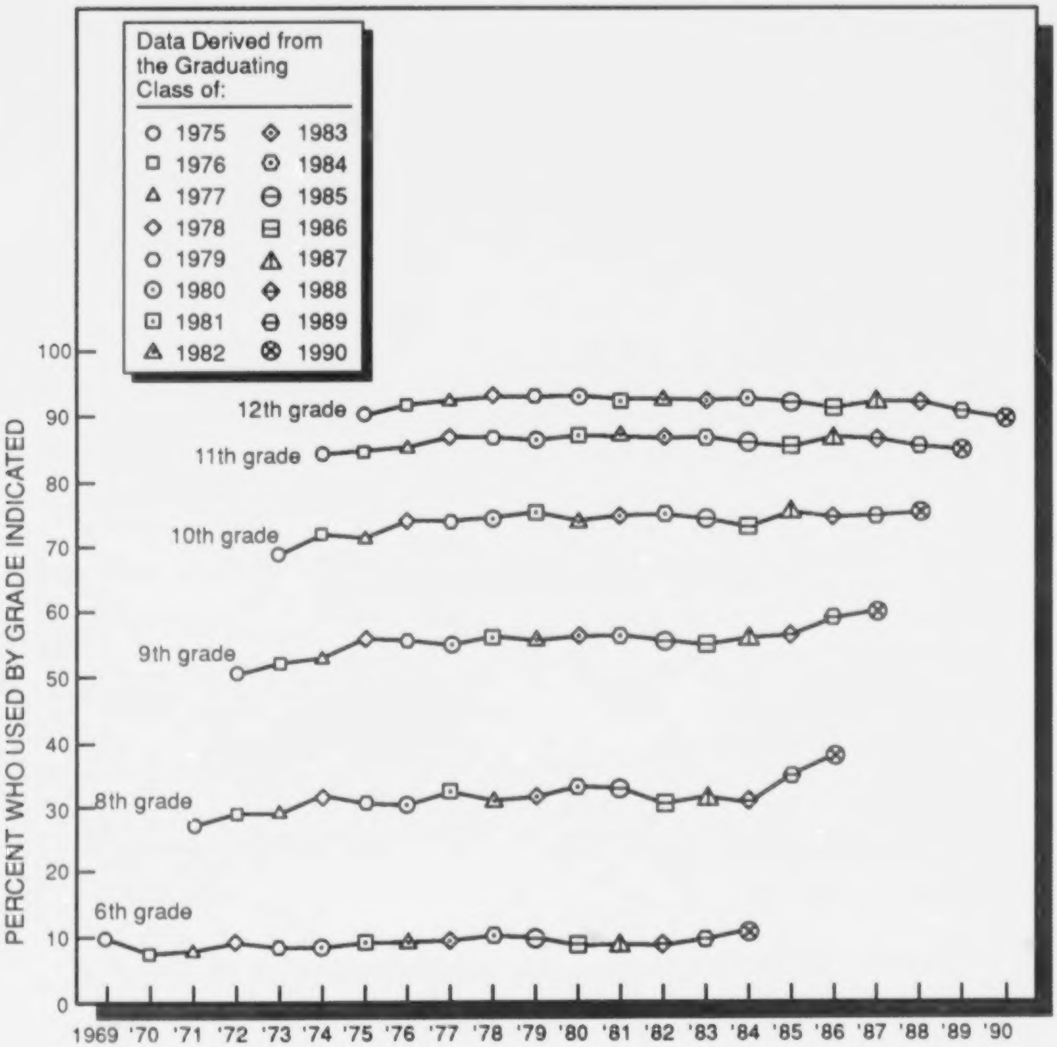


FIGURE 18r

**Alcohol: Trends in Lifetime Prevalence for Earlier Grade Levels**
Based on Retrospective Reports from Seniors



### Chapter 7

# DEGREE AND DURATION OF DRUG HIGHS

While it is possible to ask questions about substances which are manufactured and sold legally (e.g., alcohol and cigarettes) in terms of standard quantity measures, most of the illicitly used drugs are not purchased in precisely defined (or known) quantities or purities. Therefore, in order to secure indirect measures of the dose or quantity of a drug consumed per occasion, and also to help characterize the typical drug-using event for each type of drug, we have asked respondents in one of the six questionnaire forms to indicate—for each drug that they report having used in the past twelve months—how high they usually get, and how long they usually stay high. The results from those questions are presented in this chapter, along with trends since 1975 in the degree and duration of the highs usually associated with each of the relevant drugs.

## DEGREE AND DURATION OF HIGHS AMONG SENIORS IN 1990

- Figure 19 shows the proportion of 1990 seniors who say that they usually get "not at all" high, "a little" high, "moderately" high, or "very" high when they use a given type of drug. The percentages are based on all respondents who report use of the given drug class in the previous twelve months, and therefore each bar cumulates to 100%. The ordering from left to right is based on the percentage of users of each drug who report that they usually get "very" high.

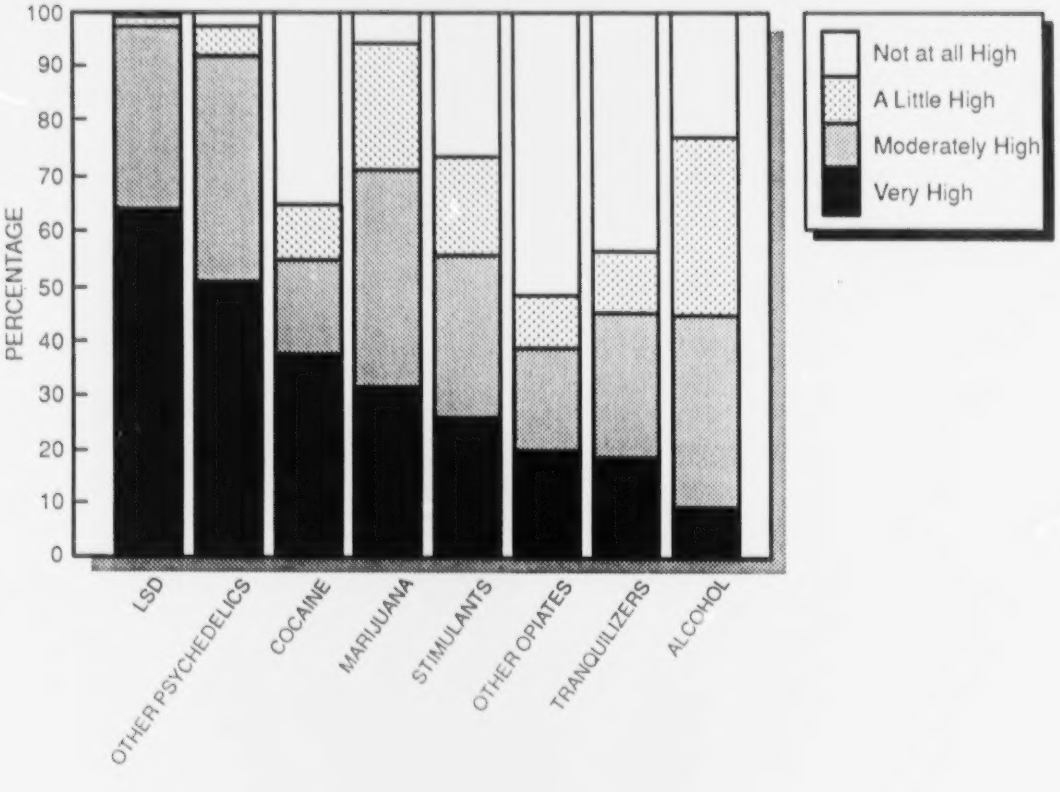
- The drugs which usually result in intense highs are the ***hallucinogens*** (LSD and other psychedelics) and ***heroin***. (Actually, this question was omitted for heroin beginning in 1982, due to small numbers of cases available each year; but an averaging across earlier years indicated that it would rank very close to LSD.)

- Following closely are ***cocaine*** and ***marijuana*** with about one-half to two-thirds of the users of each saying they usually get moderately high or very high when using the drug. Methaqualone and barbiturates are no longer included in these item sets. (Methaqualone used to rank quite high on the question about the intensity of the highs attained.)

- Three of the major psychotherapeutic drug classes—***opiates other than heroin***, ***tranquilizers***, and ***stimulants***—are less often used to get high; but substantial proportions of users (from 38% for other opiates to 55% for stimulants) still say they usually get moderately or very high after taking these drugs.

FIGURE 19

**Degree of Drug Highs Attained by Recent Users**
Class of 1990

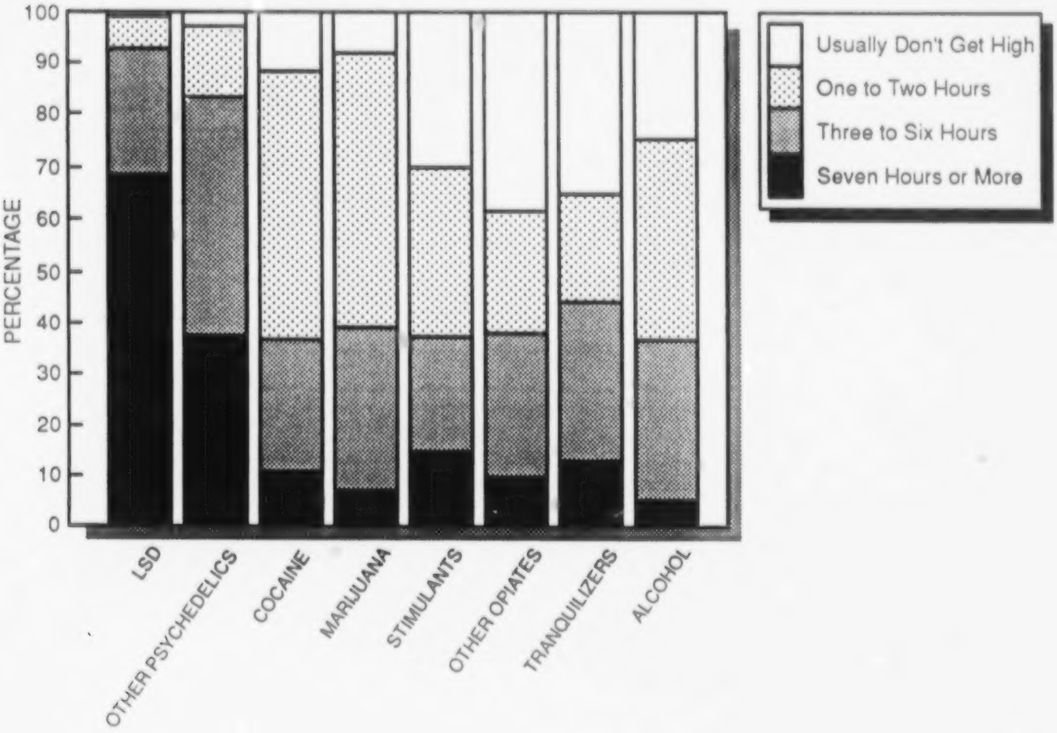


NOTE: Data are based on answers from respondents reporting any use of the drug in the prior twelve months. Heroin is not included in this figure because these particular questions are not asked of the small number of heroin users.

## FIGURE 20

## Duration of Drug Highs Attained by Recent Users

Class of 1990



NOTE: Data are based on answers from respondents reporting any use of the drug in the prior twelve months. Heroin is not included in this figure because these particular questions are not asked of the small number of heroin users.

- Relatively few of the many seniors using ***alcohol*** say that they usually get ***very*** high when drinking, although nearly half usually get at least moderately high. However, for a given individual we would expect more variability from occasion to occasion in the degree of intoxication achieved with alcohol than with most of the other drugs. Therefore, many drinkers surely get very high at least sometimes, even if that is not "usually" the case, which is what the question asks.

- Figure 20 presents the data on the duration of the highs usually obtained by users of each class of drugs. The drugs are arranged in the same order as for intensity of highs to permit an examination of the amount of correspondence between the degree and duration of highs.

- As can be seen in Figure 20, those drugs which result in the most intense highs generally tend to result in the longest highs. For example, ***LSD*** and ***other psychedelics*** rank one and two respectively on both dimensions, with substantial proportions (68% and 37%) of the users of these drugs saying they usually stay high for seven hours or more.

- However, there is not a perfect correspondence between degree and duration of highs. The highs achieved with ***marijuana***, although intense for many users, tend to be relatively short-lived in comparison with many other drugs. Fewer than 6% stay high for seven hours or more. The majority of users usually stay high two hours or less, and the modal time is one to two hours (53% of users); however, one-third (33%) report usual highs lasting 3–6 hours.

- For ***cocaine*** users the modal high is one to two hours (52%), though more than a third (36%) stay high three or more hours.

- The median duration of highs for users of ***opiates other than heroin***, ***stimulants***, and ***tranquilizers*** is one to two hours.

- In sum, the drugs vary considerably in both the duration and degree of the highs usually obtained with them, though most have a median duration of one to two hours. (These data obviously do not address the qualitative differences in the experiences of being "high.") Sizeable proportions of the users of all of these drugs report that they usually get high for at least three hours per occasion, and for a number of drugs—particularly the hallucinogens—appreciable proportions usually stay high for seven hours or more.

## TRENDS IN DEGREE AND DURATION OF DRUG HIGHS

- There have been several important shifts over the last several years in the degree or duration of highs usually experienced by users of the various drugs.

- For ***cocaine*** the degree of high obtained appears to have remained fairly constant over the past fifteen years. The duration of highs has also remained fairly constant in recent years, with no systematic shifting evident. In the onset phase of the epidemic (1976–1979), there had been a shortening of the average duration of highs; the proportion of users reporting highs of two hours or less rose from 30% to 49%. By 1990, 64% of users reported that their highs lasted two hours or less.

- For ***opiates other than heroin***, there was a fairly steady decline between 1975 and 1988 in both the intensity of the highs usually experienced ***and*** in the duration of those highs. In 1975, 39% said they usually got "very high" vs. 17% in 1988 (and 20% in 1990). The proportion usually staying high for seven or more hours dropped from 28% in 1975 to 8% in 1988 (where it remains in 1990). This substantial shift has occurred in part due to a tenfold increase in the proportion of the users say they do not take these drugs "to get high" (4% in 1975 vs. 25% in 1988 and 39% in 1990). Because the actual prevalence of opiate use has dropped rather little, this would suggest that increasing use for self-medication has to some degree masked a decrease in recreational use.

- ***Stimulants*** showed a substantial decrease between 1975 and 1981 in the proportion of recent users usually getting very high or moderately high (down from 60% in 1975 to 37% in 1981). Consistent with this, the proportion of users saying they simply "don't take them to get high" increased from 9% in 1975 to 20% by 1981. In addition, the average reported duration of stimulant highs was declining; 41% of the 1975 users said they usually stayed high seven or more hours vs. only 17% of the 1981 users.[16] In 1982 the revised version of the question about stimulant use was introduced into the form containing subsequent questions on the degree and duration of highs. Based on this revised form, there has been some continued drop in the duration and degree of highs obtained.

  These substantial decreases in both the degree and duration of highs strongly suggest that over the life of the study there has been some shift in the purpose for which stimulants are being used. An examination of data on self-reported reasons for use tends to confirm this conclusion. In essence, between 1979 and 1984 there was a relative decline in the frequency with which recent users mention "social/recreational" reasons for use, and between 1976 and 1984 there was an increase in mentions of use for instrumental purposes. More recently, since 1984, the shifts have been slight, and tend ***not*** to be continuing the pre-1984 trends.

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[16] The questionnaire form containing the questions on degree and duration of highs is one on which the amphetamine questions were clarified in 1982, to eliminate the inappropriate inclusion of nonprescription stimulants. One might have expected this change to have increased the degree and duration of highs reported, given that real amphetamines would be expected to have greater psychological impact on the average; but the trends still continued downward that year.

With respect to the social/recreational shifts from 1979 to 1984, the percent of recent users citing "to feel good or get high" as a reason for stimulant use declined from 58% to 45%; in 1990 it was 47%. Similarly, "to have a good time with my friends" declined from 38% to 30% between 1979 and 1984; in 1990 the figure was 26%. There were shifts toward more instrumental use between 1976 and 1984; to lose weight increased by 15% (to 41%); to get more energy increased 13% (to 69%); to stay awake increased by 10% (to 62%) and to get through the day increased by 10% (to 32%). Since 1988 these instrumental objectives have been less often mentioned by users: to lose weight is mentioned by only 25% in 1990; to get more energy by 58%; to stay awake by 46%; and to get through the day by 21%. The recreational motives have changed relatively little since 1984, however.

Despite the ***relative*** decline seen earlier in recreational reasons for use of stimulants, it also appears that there was at least some increase in the ***absolute*** level of recreational use, though clearly not as steep an increase as the trends through 1981 in overall use might have suggested. The data on the number of seniors exposed to people using amphetamines "to get high or for kicks," which will be discussed further in Chapter 9, showed a definite increase between 1976 and 1981. There was no further increase in exposure to people using for those purposes in 1982, however, suggesting that recreational use, as well as overall use, had leveled off; since 1982 there has been a considerable decrease in such exposure (from 50% to 28% of all seniors), indicating a substantial drop in the total number of people using stimulants for recreational purposes.

- The degree and duration of highs achieved by ***tranquilizer*** users also have been decreasing generally since about 1980.

- For ***marijuana*** there had been some general downward trending between 1978 and 1983 in the degree of the highs usually obtained. In 1978, 73% of users said they usually got "moderately high" or "very high"—a figure which dropped to 64% by 1983, and stands at 71% in 1990. Some interesting changes also took place in the duration figures between 1978 and 1983. Recall that most marijuana users say they usually stay high either one to two hours ***or*** three to six hours. Between 1975 and 1983 there was a steady decline in the proportion of users saying they stayed high three or more hours (from 52% in 1975 to 35% in 1983); the proportion stands at 39% in 1990. Until 1979, this shift could have been due almost entirely to the fact that progressively more seniors were using marijuana; and the users in more recent classes, who would ***not*** have been users in earlier classes, probably tended to be relatively light users. (We deduce this from the fact that the percentage of ***all*** seniors reporting three to six hour highs remained relatively unchanged from 1975 to 1979, while the percentage of all seniors reporting only one to two hour highs increased steadily (from 16% in 1975 to 25% in 1979).

The overall prevalence rate did ***not*** increase over the past ten years (annual prevalence actually dropped by 22%), but the shift toward shorter average highs continued through 1983. Thus we must attribute this shift to another factor, and the one which seems most likely is a general shift (even among the most marijuana-prone segment) toward a less frequent (or less intense) use of the drug. The drop in *daily* prevalence since 1979, which certainly is disproportionate to the drop in overall prevalence, is consistent with this interpretation. Also consistent is the fact that the average number of "joints" smoked per day (among those who reported any use in the prior month) has been dropping. In 1976, 49% of the recent (past 30 days) users of marijuana indicated that they averaged less than one "joint" per day in the prior 30 days, but by 1990 this proportion had risen to 70%. In sum, not only are fewer high school students now using marijuana, but those who are using seem to be using less frequently and to be taking smaller amounts (and doses of the active ingredient) per occasion.

This is of particular interest in light of the evidence from other sources that the THC content of marijuana has risen dramatically during the eighties. The evidence here would suggest that users have titrated their intake to achieve a certain (perhaps declining) level of high, and thus are smoking less marijuana in terms of volume.

- There are no clearly discernible patterns in the intensity or duration of the highs being experienced with ***LSD*** or ***hallucinogens other than LSD***. (Data have not been collected for highs experienced in the use of ***inhalants***, the ***nitrites*** specifically, or ***PCP*** specifically; and the number of admitted ***heroin*** users on a single questionnaire form is inadequate to estimate trends reliably.)

- The intensity and duration of highs associated with ***alcohol*** use have been generally stable throughout the study period.

## Chapter 8

# ATTITUDES AND BELIEFS ABOUT DRUGS AMONG SENIORS

This section presents the cross-time results for three sets of attitude and belief questions. One set concerns seniors' views about how harmful various kinds of drug use would be for the user, the second asks how much seniors personally disapprove of various kinds of drug use, and the third deals with attitudes on the legality of using various drugs under different conditions. (The next section covers the closely related topics of parents' and friends' attitudes about drugs, as the seniors perceive them.)

As the data below show, overall percentages disapproving various drugs, and the percentages believing their use to involve serious risk, both tend to parallel the percentages of actual users. Thus, for example, of the illicit drugs marijuana is the most frequently used and one of the least likely to be seen as risky to use. This and many other such parallels suggest that the individuals who use a drug are less likely to disapprove use of it or to view its use as involving risk. A series of individual-level analyses of these data confirms this conclusion: strong correlations exist between individual use of drugs and the various attitudes and beliefs about those drugs. Those seniors who use a given drug also are more likely to approve its use, see it as less dangerous, and report their own parents and friends as being at least somewhat more accepting of its use.

The attitudes and beliefs about drug use reported below have been changing during recent years, along with actual behavior. In particular, views about marijuana use, and legal sanctions against use, have shown important trends.

Beginning in 1979, scientists, policy makers, and in particular the electronic and printed media, have given considerable attention to the increasing levels of regular marijuana use among young people, and to the potential hazards associated with such use. As will be seen below, attitudes and beliefs about regular use of marijuana have shifted dramatically since 1979 in a more conservative direction—a shift which coincides with a reversal in the previous rapid rise of daily use, and which very likely reflects the impact of this increased public attention. In 1987, a similar shift began to occur for cocaine and has continued since.

## PERCEIVED HARMFULNESS OF DRUGS

### *Beliefs in 1990 about Harmfulness*

- A substantial majority of high school seniors perceive *regular* use of ***any of the illicit drugs*** as entailing "great risk" of harm for the user (see Table 18). Some 92% of the sample feel this way about regular use of ***crack***, the highest proportion for any of these drugs—and 90% associate great risk with using ***cocaine powder*** or ***heroin*** regularly. The proportions attributing great risk to ***LSD***, ***amphetamines***, and ***barbiturates*** are 85%, 71%, and 70%, respectively.

- Regular use of ***cigarettes*** (i.e., one or more packs a day) is judged by two-thirds of all seniors (68%) as entailing a great risk of harm for the user.

- Regular use of ***marijuana*** is judged to involve great risk by 78% of the sample, somewhat more than judge cigarette smoking to involve great risk, perhaps in part because marijuana can have dramatic short-term impacts on mood, behavior, memory, etc., in addition to any long-term physiological impacts—points which have been stressed for years in the National Media-Advertising Partnership ad campaign.

- Regular use of ***alcohol*** was more explicitly defined in several questions. Just under one-third (31%) associate much risk of harm with having one or two drinks almost daily. Nearly half (47%) think there is great risk involved in having five or more drinks once or twice each weekend. Over two-thirds (71%) think the user takes a great risk in consuming four or five drinks nearly every day, but this means that more than a quarter of the students do not view even this pattern of regular heavy drinking as entailing great risk.

- Compared with the above perceptions about the risks of regular use of each drug, many fewer respondents feel that a person runs a "great risk" of harm by simply trying the drug once or twice.

- Relatively few think there is much risk in using ***marijuana*** experimentally (23%) or even occasionally (37%).

- Experimental use of the other illicit drugs, however, is still viewed as risky by substantial proportions. The percentages associating great risk with experimental use rank order as follows: 64% for ***crack***, 55% for ***PCP***, 55% for ***heroin***, 54% for ***cocaine powder***, 45% for ***LSD***, 32% for both ***amphetamines*** and ***barbiturates***, and only 23% for ***marijuana***.

- The use of powdered ***cocaine*** is seen as less dangerous than the use of ***crack*** cocaine at experimental and occasional levels of use, but as engendering about the same level of risk at the regular use level.

- Very few respondents (8%) believe there is much risk involved in trying an ***alcoholic beverage*** once or twice.

# TABLE 18

## Trends in Harmfulness of Drugs as Perceived by Seniors

| *Q. How much do you think people risk harming themselves (physically or in other ways), if they . . .* | Percentage saying "great risk"[a] | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Class of 1975 | Class of 1976 | Class of 1977 | Class of 1978 | Class of 1979 | Class of 1980 | Class of 1981 | Class of 1982 | Class of 1983 | Class of 1984 | Class of 1985 | Class of 1986 | Class of 1987 | Class of 1988 | Class of 1989 | Class of 1990 | '89–'90 change |
| Try marijuana once or twice | 15.1 | 11.4 | 9.5 | 8.1 | 9.4 | 10.0 | 13.0 | 11.5 | 12.7 | 14.7 | 14.8 | 15.1 | 18.4 | 19.0 | 23.6 | 23.1 | –0.5 |
| Smoke marijuana occasionally | 18.1 | 15.0 | 13.4 | 12.4 | 13.5 | 14.7 | 19.1 | 18.3 | 20.6 | 22.6 | 24.5 | 25.0 | 30.4 | 31.7 | 36.5 | 36.9 | +0.4 |
| Smoke marijuana regularly | 43.3 | 38.6 | 36.4 | 34.9 | 42.0 | 50.4 | 57.6 | 60.4 | 62.8 | 66.9 | 70.4 | 71.3 | 73.5 | 77.0 | 77.5 | 77.8 | +0.3 |
| Try LSD once or twice | 49.4 | 45.7 | 43.2 | 42.7 | 41.6 | 43.9 | 45.5 | 44.9 | 44.7 | 45.4 | 43.5 | 42.0 | 44.9 | 45.7 | 46.0 | 44.7 | –1.3 |
| Take LSD regularly | 81.4 | 80.8 | 79.1 | 81.1 | 82.4 | 83.0 | 83.5 | 83.5 | 83.2 | 83.8 | 82.9 | 82.6 | 83.8 | 84.2 | 84.3 | 84.5 | +0.2 |
| Try PCP once or twice | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 55.6 | 58.8 | 56.6 | 55.2 | –1.4 |
| Try cocaine once or twice | 42.6 | 39.1 | 35.6 | 33.2 | 31.5 | 31.3 | 32.1 | 32.8 | 33.0 | 35.7 | 34.0 | 33.5 | 47.9 | 51.2 | 54.9 | 59.4 | +4.5ss |
| Take cocaine occasionally | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 54.2 | 66.8 | 69.2 | 71.8 | 73.9 | +2.1 |
| Take cocaine regularly | 73.1 | 72.3 | 68.2 | 68.2 | 69.5 | 69.2 | 71.2 | 73.0 | 74.3 | 78.8 | 79.0 | 82.2 | 88.5 | 89.2 | 90.2 | 91.1 | +0.9 |
| Try "crack" once or twice | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 57.0 | 62.1 | 62.9 | 64.3 | +1.4 |
| Take "crack" occasionally | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 70.4 | 73.2 | 75.3 | 80.4 | +5.1sss |
| Take "crack" regularly | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 84.6 | 84.8 | 85.6 | 91.6 | +6.0sss |
| Try cocaine powder once or twice | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 45.3 | 51.7 | 53.8 | 53.9 | +0.1 |
| Take cocaine powder occasionally | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 56.8 | 61.9 | 65.8 | 71.1 | +5.3ss |
| Take cocaine powder regularly | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 81.4 | 82.9 | 83.9 | 90.2 | +6.3sss |
| Try heroin once or twice | 60.1 | 58.9 | 55.8 | 52.9 | 50.4 | 52.1 | 52.9 | 51.1 | 50.8 | 49.8 | 47.3 | 45.8 | 53.6 | 54.0 | 53.8 | 55.4 | +1.6 |
| Take heroin occasionally | 75.6 | 75.6 | 71.9 | 71.4 | 70.9 | 70.9 | 72.2 | 69.8 | 71.8 | 70.7 | 69.8 | 68.2 | 74.6 | 73.8 | 75.5 | 76.6 | +1.1 |
| Take heroin regularly | 87.2 | 88.6 | 86.1 | 86.6 | 87.5 | 86.2 | 87.5 | 86.0 | 86.1 | 87.2 | 86.0 | 87.1 | 88.7 | 88.8 | 89.5 | 90.2 | +0.7 |
| Try amphetamines once or twice | 35.4 | 33.4 | 30.8 | 29.9 | 29.7 | 29.7 | 26.4 | 25.3 | 24.7 | 25.4 | 25.2 | 25.1 | 29.1 | 29.6 | 32.8 | 32.2 | –0.6 |
| Take amphetamines regularly | 69.0 | 67.3 | 66.6 | 67.1 | 69.9 | 69.1 | 66.1 | 64.7 | 64.8 | 67.1 | 67.2 | 67.3 | 69.4 | 69.8 | 71.2 | 71.2 | 0.0 |
| Try barbiturates once or twice | 34.8 | 32.5 | 31.2 | 31.3 | 30.7 | 30.9 | 28.4 | 27.5 | 27.0 | 27.4 | 26.1 | 25.4 | 30.9 | 29.7 | 32.2 | 32.4 | +0.2 |
| Take barbiturates regularly | 69.1 | 67.7 | 68.6 | 68.4 | 71.6 | 72.2 | 69.9 | 67.6 | 67.7 | 68.5 | 68.3 | 67.2 | 69.4 | 69.6 | 70.5 | 70.2 | –0.3 |
| Try one or two drinks of an alcoholic beverage (beer, wine, liquor) | 5.3 | 4.8 | 4.1 | 3.4 | 4.1 | 3.8 | 4.6 | 3.5 | 4.2 | 4.6 | 5.0 | 4.6 | 6.2 | 6.0 | 6.0 | 8.3 | +2.3ss |
| Take one or two drinks nearly every day | 21.5 | 21.2 | 18.5 | 19.6 | 22.6 | 20.3 | 21.6 | 21.6 | 21.6 | 23.0 | 24.4 | 25.1 | 26.2 | 27.3 | 28.5 | 31.3 | +2.8 |
| Take four or five drinks nearly every day | 63.5 | 61.0 | 62.9 | 63.1 | 66.2 | 65.7 | 64.5 | 65.5 | 66.8 | 68.4 | 69.8 | 66.5 | 69.7 | 68.5 | 69.8 | 70.9 | +1.1 |
| Have five or more drinks once or twice each weekend | 37.8 | 37.0 | 34.7 | 34.5 | 34.9 | 35.9 | 36.3 | 36.0 | 38.6 | 41.7 | 43.0 | 39.1 | 41.9 | 42.6 | 44.0 | 47.1 | +3.1 |
| Smoke one or more packs of cigarettes per day | 51.3 | 56.4 | 58.4 | 59.0 | 63.0 | 63.7 | 63.3 | 60.5 | 61.2 | 63.8 | 66.5 | 66.0 | 68.6 | 68.0 | 67.2 | 68.2 | +1.0 |
| Approx. N = | (2804) | (2918) | (3052) | (3770) | (3250) | (3234) | (3604) | (3557) | (3305) | (3262) | (3250) | (3020) | (3315) | (3276) | (2796) | (2553) | |

NOTE: Level of significance of difference between the two most recent classes: s = .05, ss = .01, sss = .001. NA indicates data not available.

[a] Answer alternatives were: (1) No risk, (2) Slight risk, (3) Moderate risk, (4) Great risk, and (5) Can't say, drug unfamiliar.

### *Trends in Perceived Harmfulness*

- Several very important trends have been taking place in recent years in these beliefs about the dangers associated with using various drugs (see Table 18 and Figures 21, 22, and 25).

- One of the most important trends involves ***marijuana*** (Figure 21). From 1975 through 1978 there had been a decline in the harmfulness perceived to be associated with all levels of marijuana use; but in 1979, for the first time, there was an increase in these proportions—an increase which preceded any appreciable downturn in use and which has continued fairly steadily since then. By far the most impressive increase in perceived risk has occurred for ***regular marijuana use***, where the proportion perceiving it as involving a great risk has more than doubled in twelve years—from 35% in 1978 to 78% in 1990. This dramatic change occurred during a period in which a substantial amount of scientific and media attention was being devoted to the potential dangers of heavy marijuana use. Young people also had ample opportunity for vicarious learning about the effects of heavy use since such use was so widespread among their peers. Although there have been upward shifts in concerns about the harmfulness of occasional, and even experimental, use, they have not been as large in absolute terms, though they have been in proportional terms. The shifts between 1989 and 1990 are very slight for all three measures, suggesting that after more than a decade of change, they may be stabilizing.

  Figure 23 shows the trend in the perceived risk of regular use along with the trend in thirty-day prevalence of use to show more clearly their degree of covariance over time, which we interpret as reflecting a causal connection.[17] Also included is the trend line for the perceived availability of marijuana (see next chapter) to show its lack of covariance with use, and thus its inability to explain the downturn.

- A somewhat similar cross-time profile of attitudes has been emerging for ***cocaine*** (Figure 22). First, the percentage who perceived great risk in ***trying cocaine*** once or twice dropped steadily from 43% to 31% between 1975 and 1980, which generally corresponds to the period of rapidly increasing use. However, rather than reversing sharply, as did perceived risk for marijuana, perceived risk for experimental cocaine use moved rather little for the next six years, 1980 to 1986, corresponding to a fairly stable period in terms of actual prevalence in use. Then in 1987 perceived risk for experimenting with cocaine jumped sharply from 34% to 48% in a

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[17] In a recent journal article we address the alternate hypothesis that a general shift toward a more conservative lifestyle might account for the shifts in both attitudes and behaviors (Bachman, J.G., Johnston, L.D., O'Malley, P.M., and Humphrey, R.H. (1988). Explaining the recent decline in marijuana use: Differentiating the effects of perceived risks, disapproval, and general lifestyle factors. *Journal of Health and Social Behavior,* 29 92–112. The empirical evidence tended to contradict that hypothesis.

FIGURE 21

**Trends in Perceived Harmfulness: Marijuana and Cigarettes**
All Seniors

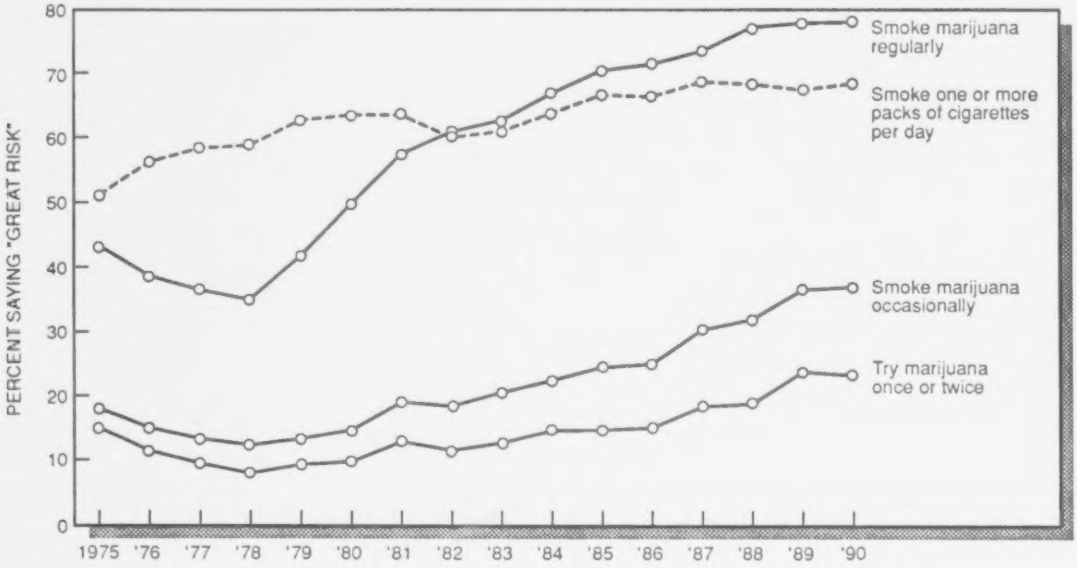


FIGURE 22

**Trends in Perceived Harmfulness: Cocaine**
All Seniors

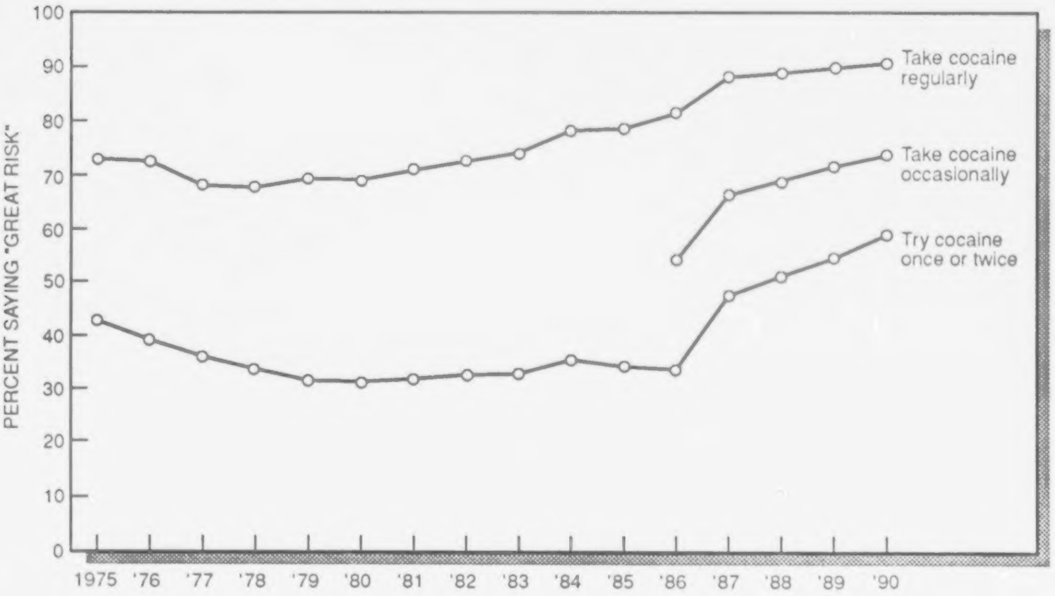
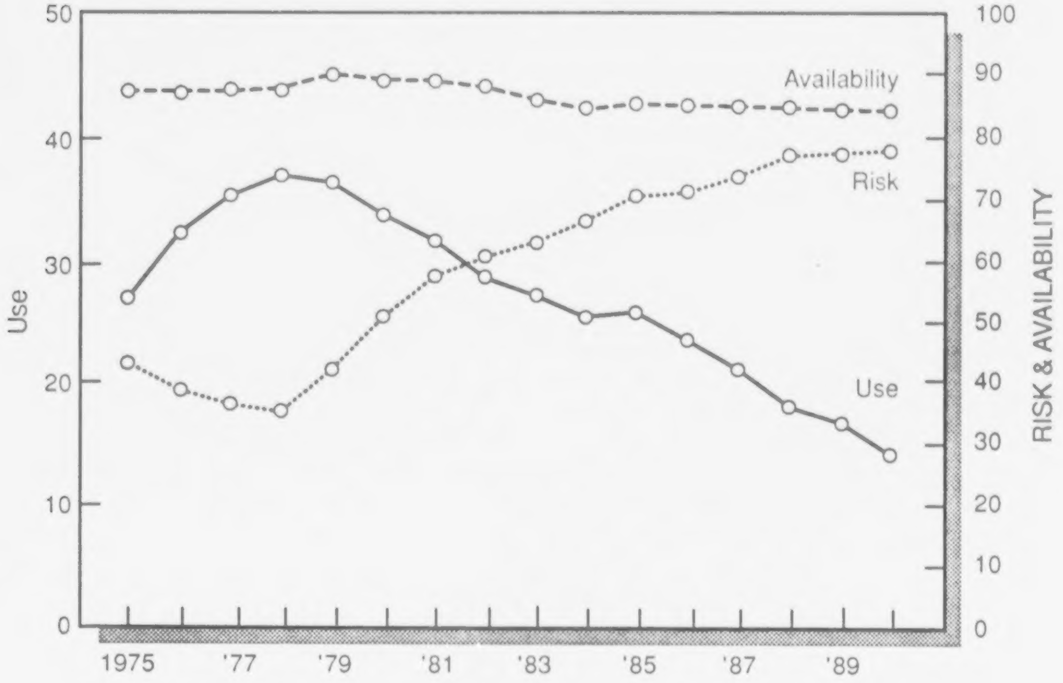


FIGURE 23

## Marijuana: Trends in Perceived Availability, Perceived Risk of Regular Use, and Prevalence of Use in Past Thirty-Days

All Seniors



Use: % using once or more in past 30 days

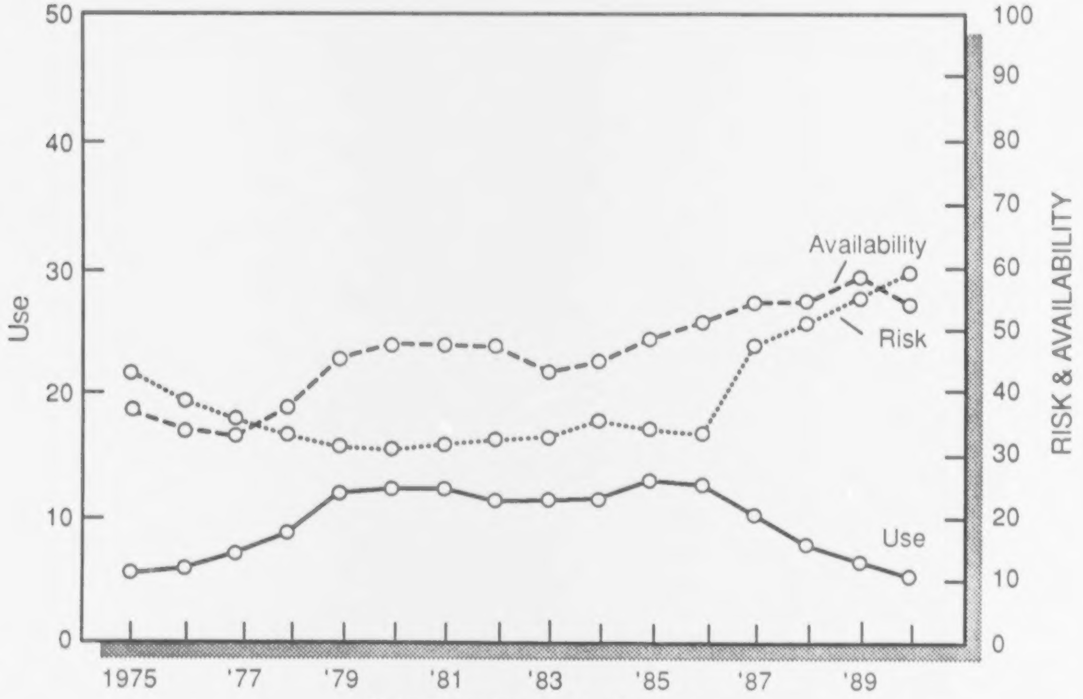
Risk: % saying great risk of harm in regular use

Availability: % saying fairly easy or very easy to get

## FIGURE 24

## Cocaine: Trends in Perceived Availability, Perceived Risk of Trying, and Prevalence of Use in Past Year

All Seniors



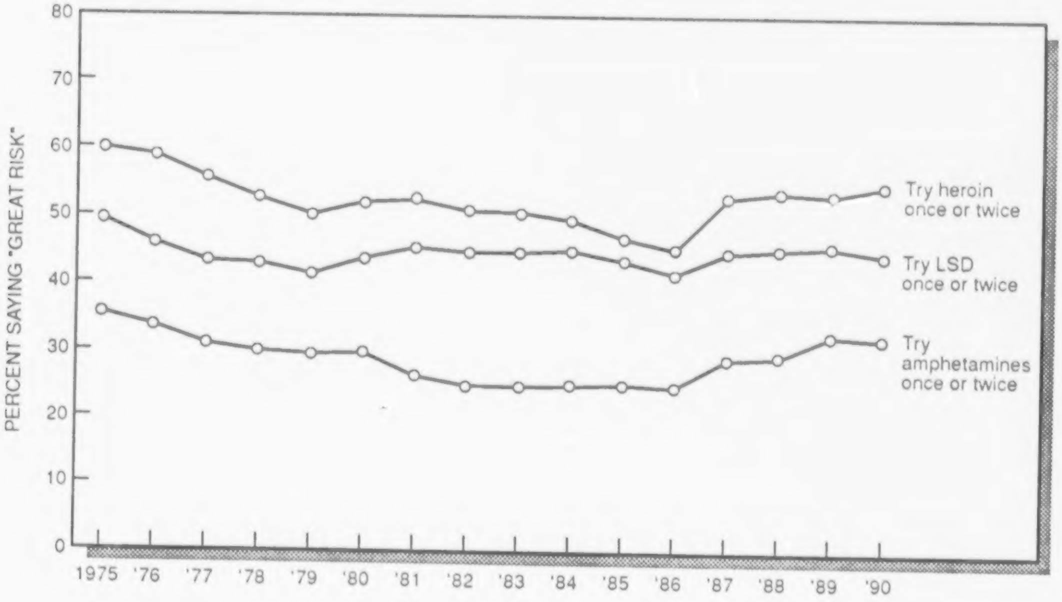
Use: % using once or more in past 12 months

Risk: % saying great risk of harm in using once or twice

Availability: % saying fairly easy or very easy to get

## FIGURE 25

**Trends in Perceived Harmfulness: Other Drugs**
All Seniors



single year and in that year the first significant decline in use took place. In 1990 perceived risk again increased significantly to 59%, and as Table 18 shows, the increase in perceived risk applies both to cocaine in powdered form and in crack form. We believe this change in attitude had an important impact on the behavior. Actually, perceived risk for ***regular*** cocaine use had begun to rise earlier, increasing gradually from 69% in 1980 to 82% in 1986; but we believe that the change in this statistic did not translate into a change in behavior, as happened for marijuana, because so few high school seniors were regular users (unlike the situation with marijuana) and most probably did not expect to be. Thus, as we predicted earlier, it was not until their attitudes about experimental (and possibly occasional) use began to change that this class of attitudes began to affect their behavior.[18] Figure 24 shows trends in perceived risk, perceived availability, and actual use simultaneously—again to show how shifts in perceived risk could explain the downturn in use while shifts in availability could not.

Just as we interpret the change in actual behavior between 1986 and 1990 to have resulted from changes in the risk associated with experimental and occasional use, we believe the changes in these attitudes to have resulted from two other factors: (1) the greatly increased media coverage of cocaine and its dangers which occurred in that interval (including many anti-drug "spots") and (2) the tragic deaths in 1986 of sports stars Len Bias and Don Rogers, both of which were caused by cocaine. The latter events, we believe, helped to bring home first the notion that no one—regardless of age or physical condition—is invulnerable to being killed by cocaine, and second the notion that one does not have to be an addict or regular user to suffer such adverse consequences. Clearly the addictive potential of cocaine has been emphasized in the media, as well.

- There also had been an important increase, over a longer period, in the number who thought pack-a-day ***cigarette*** smoking involved great risk to the user (from 51% in 1975 to 64% in 1980). This shift corresponded with, and to some degree preceded, the downturn in regular smoking found in this age group (compare Figures 9f and 21). But between 1980 and 1984 this statistic showed no further increase (presaging the end of the decline in use). Since 1984, the percent perceiving great risk in regular smoking has risen less than five percent. What may be most important is that still about a third (32%) of these young people do not believe there is a great risk in smoking a pack or more of cigarettes per day, despite all that is known today about the health consequences of cigarette smoking.

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[18] See Bachman, J.G., Johnston, L.D., & O'Malley, P.M. (1990). Explaining the recent decline in cocaine use among young adults: Further evidence that perceived risks and disapproval lead to reduced drug use. *Journal of Health and Social Behavior, 31*, 173–184. And also, Johnston, L.D. (1991). Toward a theory of drug epidemics. *In* R.L. Donohew, H. Sypher, & W. Bukoski (Eds.) *Persuasive communication and drug abuse prevention* (pp. 93–132). Hillsdale, NJ: Lawrence Erlbaum.

- For most of the ***other illicit drugs***, the period from 1975 to 1979 marked a modest but consistent trend in the direction of fewer students associating much risk with experimental or occasional use of them (Table 18 and Figure 25). Only for ***amphetamines*** and ***barbiturates*** did this trend continue beyond 1979, until about 1982 in both cases. Over the next several years there was little change, although perceived risk of harm in experimental or occasional use of the illicit drugs other than marijuana all dropped slightly in 1985 and 1986. However, the perceived risk of experimental or occasional use increased for all drugs in 1987, but since then has pretty much stabilized.

- In sum, between 1975 and 1979 there was a distinct decline in perceived harmfulness associated with use of all the illicit drugs. Since 1979, there has been a dramatic increase in concerns about regular marijuana use, and a more modest increase in concerns about use of that drug at less frequent levels. Since 1986 there has been a sharp increase in the risks associated with cocaine use—particularly at the experimental level—and some increase in perceived risk for virtually all of the other illicit drugs, as well.

- After showing little systematic change in the latter half of the 1970s, the perceived risks associated with alcohol use at various levels have risen slightly during the 1980s (though not nearly so dramatically as the perceived risks associated with marijuana and cocaine). The proportions perceiving great risk of harm in having 1 to 2 drinks nearly every day rose from 20% in 1980 to 31% in 1990. The proportions perceiving great risk in having 4 to 5 drinks nearly every day rose slightly from 66% to 71% over the same period, while the corresponding figures for ***occasional heavy drinking*** (having 5 or more drinks once or twice a weekend) rose by more—from 36% to 47%. (Recall that the reported prevalence of occasional heavy drinking—having 5 or more drinks in a row at least once in the prior two weeks—declined in the same period, from 41% in 1980 to 32% in 1990.) These increases in perceived risk tended to be followed by some declines in the actual behaviors—once again suggesting the importance of these beliefs in influencing behavior.

## PERSONAL DISAPPROVAL OF DRUG USE

A different set of questions was developed to try to measure the moral sentiment respondents attach to various types of drug use. The phrasing, "Do you disapprove of people (who are 18 or older) doing each of the following" was adopted.

### *Extent of Disapproval in 1990*

- The vast majority of these students do not condone regular use of ***any of the illicit drugs*** (see Table 19). Even regular marijuana use is disapproved by 91%, and regular use of each of the other illicits receives disapproval from between 96% and 98% of today's high school seniors.

- For each of the drugs included in the question, fewer people indicate disapproval of experimental or occasional use than of regular use, as would be expected. The differences are not great, however, for the illicit drugs other than marijuana, because nearly all seniors disapprove even experimentation. For example, 90% disapprove experimenting with ***LSD***, 92% with ***cocaine***, and 95% with ***heroin***.

- For ***marijuana***, however, the rate of disapproval varies substantially for different usage habits, although not as much as it did in the past. Some 68% disapprove trying it versus 91% who disapprove regular use.

- Smoking a pack (or more) of ***cigarettes*** per day receives the disapproval of 73% of the age group.

- ***Drinking*** at the rate of one or two drinks daily is disapproved by 78% of the seniors. A curious finding is that weekend binge drinking (five or more drinks once or twice each weekend) is acceptable to more seniors than is moderate daily drinking; only 69% disapprove of having five or more drinks once or twice a weekend. This is in spite of the fact that more seniors associate great risk with weekend binge drinking (47%) than with moderate daily drinking (31%). One likely explanation for these anomalous findings may be the fact that a greater proportion of this age group are themselves weekend binge drinkers rather than moderate daily drinkers. They thus express attitudes accepting of their own behavior, even though such attitudes may be somewhat inconsistent with their beliefs about possible consequences. It also may well be that the ubiquitous advertising of alcohol use in "partying" situations has managed to increase acceptability from what it would be in the absence of such advertising.

### *Trends in Disapproval*

- Between 1975 and 1977 there occurred a substantial decrease in disapproval of ***marijuana*** use at any level of frequency (see Table 19, and Figure 26a in next chapter). About 14% fewer seniors in the class of 1977 (compared with the class of 1975) disapproved of experimenting, 11% fewer disapproved of occasional use, and 6% fewer disapproved of regular use. These undoubtedly were continuations of trends which began in the late 60's, as the norms of American young people against illicit drug use were seriously

## TABLE 19

## Trends in Proportions of Seniors Disapproving of Drug Use

| *Q. Do you disapprove of people (who are 18 or older) doing each of the following?*[b] | Percentage "disapproving"[a] | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Class of 1975 | Class of 1976 | Class of 1977 | Class of 1978 | Class of 1979 | Class of 1980 | Class of 1981 | Class of 1982 | Class of 1983 | Class of 1984 | Class of 1985 | Class of 1986 | Class of 1987 | Class of 1988 | Class of 1989 | Class of 1990 | '89–'90 change |
| Try marijuana once or twice | 47.0 | 38.4 | 33.4 | 33.4 | 34.2 | 39.0 | 40.0 | 45.5 | 46.3 | 49.3 | 51.4 | 54.6 | 56.6 | 60.8 | 64.6 | 67.8 | +3.2s |
| Smoke marijuana occasionally | 54.8 | 47.8 | 44.3 | 43.5 | 45.3 | 49.7 | 52.6 | 59.1 | 60.7 | 63.5 | 65.8 | 69.0 | 71.6 | 74.0 | 77.2 | 80.5 | +3.3s |
| Smoke marijuana regularly | 71.9 | 69.5 | 65.5 | 67.5 | 69.2 | 74.6 | 77.4 | 80.6 | 82.5 | 84.7 | 85.5 | 86.6 | 89.2 | 89.3 | 89.8 | 91.0 | +1.2 |
| Try LSD once or twice | 82.8 | 84.6 | 83.9 | 85.4 | 86.6 | 87.3 | 86.4 | 88.8 | 89.1 | 88.9 | 89.5 | 89.2 | 91.6 | 89.8 | 89.7 | 89.8 | +0.1 |
| Take LSD regularly | 94.1 | 95.3 | 95.8 | 96.4 | 96.9 | 96.7 | 96.8 | 96.7 | 97.0 | 96.8 | 97.0 | 96.6 | 97.8 | 96.4 | 96.4 | 96.3 | –0.1 |
| Try cocaine once or twice | 81.3 | 82.4 | 79.1 | 77.0 | 74.7 | 76.3 | 74.6 | 76.6 | 77.0 | 79.7 | 79.3 | 80.2 | 87.3 | 89.1 | 90.5 | 91.5 | +1.0 |
| Take cocaine regularly | 93.3 | 93.9 | 92.1 | 91.9 | 90.8 | 91.1 | 90.7 | 91.5 | 93.2 | 94.5 | 93.8 | 94.3 | 96.7 | 96.2 | 96.4 | 96.7 | +0.3 |
| Try heroin once or twice | 91.5 | 92.6 | 92.5 | 92.0 | 93.4 | 93.5 | 93.5 | 94.6 | 94.3 | 94.0 | 94.0 | 93.3 | 96.2 | 95.0 | 95.4 | 95.1 | –0.3 |
| Take heroin occasionally | 94.8 | 96.0 | 96.0 | 96.4 | 96.8 | 96.7 | 97.2 | 96.9 | 96.9 | 97.1 | 96.8 | 96.6 | 97.9 | 96.9 | 97.2 | 96.7 | –0.5 |
| Take heroin regularly | 96.7 | 97.5 | 97.2 | 97.8 | 97.9 | 97.6 | 97.8 | 97.5 | 97.7 | 98.0 | 97.6 | 97.6 | 98.1 | 97.2 | 97.4 | 97.5 | +0.1 |
| Try amphetamines once or twice | 74.8 | 75.1 | 74.2 | 74.8 | 75.1 | 75.4 | 71.1 | 72.6 | 72.3 | 72.8 | 74.9 | 76.5 | 80.7 | 82.5 | 83.3 | 85.3 | +2.0 |
| Take amphetamines regularly | 92.1 | 92.8 | 92.5 | 93.5 | 94.4 | 93.0 | 91.7 | 92.0 | 92.6 | 93.6 | 93.3 | 93.5 | 95.4 | 94.2 | 94.2 | 95.5 | +1.3 |
| Try barbiturates once or twice | 77.7 | 81.3 | 81.1 | 82.4 | 84.0 | 83.9 | 82.4 | 84.4 | 83.1 | 84.1 | 84.9 | 86.8 | 89.6 | 89.4 | 89.3 | 90.5 | +1.2 |
| Take barbiturates regularly | 93.3 | 93.6 | 93.0 | 94.3 | 95.2 | 95.4 | 94.2 | 94.4 | 95.1 | 95.1 | 95.5 | 94.9 | 96.4 | 95.3 | 95.3 | 96.4 | +1.1 |
| Try one or two drinks of an alcoholic beverage (beer, wine, liquor) | 21.6 | 18.2 | 15.6 | 15.6 | 15.8 | 16.0 | 17.2 | 18.2 | 18.4 | 17.4 | 20.3 | 20.9 | 21.4 | 22.6 | 27.3 | 29.4 | +2.1 |
| Take one or two drinks nearly every day | 67.6 | 68.9 | 66.8 | 67.7 | 68.3 | 69.0 | 69.1 | 69.9 | 68.9 | 72.9 | 70.9 | 72.8 | 74.2 | 75.0 | 76.5 | 77.9 | +1.4 |
| Take four or five drinks nearly every day | 88.7 | 90.7 | 88.4 | 90.2 | 91.7 | 90.8 | 91.8 | 90.9 | 90.0 | 91.0 | 92.0 | 91.4 | 92.2 | 92.8 | 91.6 | 91.9 | +0.3 |
| Have five or more drinks once or twice each weekend | 60.3 | 58.6 | 57.4 | 56.2 | 56.7 | 55.6 | 55.5 | 58.8 | 56.6 | 59.6 | 60.4 | 62.4 | 62.0 | 65.3 | 66.5 | 68.9 | +2.4 |
| Smoke one or more packs of cigarettes per day | 67.5 | 65.9 | 66.4 | 67.0 | 70.3 | 70.8 | 69.9 | 69.4 | 70.8 | 73.0 | 72.3 | 75.4 | 74.3 | 73.1 | 72.4 | 72.8 | +0.4 |
| Approx. N = | (2677) | (2957) | (3085) | (3686) | (3221) | (3261) | (3610) | (3651) | (3341) | (3254) | (3265) | (3113) | (3302) | (3311) | (2799) | (2566) | |

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NOTE: Level of significance of difference between the two most recent classes: s = .05, ss = .01, sss = .001.

[a] Answer alternatives were: (1) Don't disapprove, (2) Disapprove, and (3) Strongly disapprove. Percentages are shown for categories (2) and (3) combined.

[b] The 1975 question asked about people who are "20 or older."

eroded. Since 1977, however, there has been a substantial reversal of that trend, with disapproval of experimental marijuana use having risen by 34%, disapproval of occasional use by 36%, and disapproval of regular use by 26%. (These trends continued in 1990.)

- Until 1980 the proportion of seniors who disapproved trying ***amphetamines*** had remained extremely stable (at 75%). This proportion dropped slightly in 1981 (to 71%), but increased thereafter and reached 85% in 1990.

- During the late 1970's personal disapproval of experimenting with ***barbiturates*** had been increasing (from 78% in 1975 to 84% in 1979). It then remained relatively stable through 1984, when it began to increase again. By 1990 it had reached 91%.

- Concurrent with the years of increase in actual ***cocaine*** use, disapproval of experimental use of cocaine had declined somewhat, from a high of 82% in 1976 down to 75% in 1979. It then leveled for four years, edged upward for a couple of years to about 80% in 1986, and since then has risen significantly so that 92% of seniors now disapprove of trying cocaine.

- We believe that the parallel trends between perceived risk and disapproval—particularly for marijuana—are no accident. We hypothesize that perceived risk influences one's disapproval of a drug-using behavior. As levels of personal disapproval change, on average, and these individually held attitudes are then communicated among friends and acquaintances, perceived norms also change (as will be illustrated in the next chapter).

- In earlier years disapproval of regular ***cigarette*** smoking had increased very modestly (from 66% in 1976 to 71% in 1980). By 1985, disapproval stood at only 72%; since then, it has risen only 1%, to 73% in 1990.

- Since 1980, disapproval of alcohol use has risen very gradually (and not entirely consistently). Disapproval of weekend binge drinking has risen by 13%, from 56% in 1980 to a high of 69% in 1990. It is also interesting to note that the proportion of seniors who disapprove of even trying alcohol has risen by the same amount, from a low point of 16% in 1980 to 29% in 1990.

## ATTITUDES REGARDING THE LEGALITY OF DRUG USE

Since the legal restraints on drug use appeared likely to be in a state of flux for some time, we decided at the beginning of the study to measure attitudes about legal sanctions. As it turns out, some dramatic changes in these attitudes have occurred during the life of the study. Table 20 presents a statement of one set of general questions on this subject along with the answers provided by each senior class. The set lists a sam-

# TABLE 20

## Trends in Seniors' Attitudes Regarding Legality of Drug Use

| | Percentage saying "yes"[a] | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| *Q. Do you think that people (who are 18 or older) should be prohibited by law from doing each of the following?*[b] | Class of 1975 | Class of 1976 | Class of 1977 | Class of 1978 | Class of 1979 | Class of 1980 | Class of 1981 | Class of 1982 | Class of 1983 | Class of 1984 | Class of 1985 | Class of 1986 | Class of 1987 | Class of 1988 | Class of 1989 | Class of 1990 | '89–'90 change |
| Smoke marijuana in private | 32.8 | 27.5 | 26.8 | 25.4 | 28.0 | 28.9 | 35.4 | 36.6 | 37.8 | 41.6 | 44.7 | 43.8 | 47.6 | 51.8 | 51.5 | 56.0 | +4.5ss |
| Smoke marijuana in public places | 63.1 | 59.1 | 58.7 | 59.5 | 61.8 | 66.1 | 67.4 | 72.8 | 73.6 | 75.2 | 78.2 | 78.9 | 79.7 | 81.3 | 80.0 | 81.9 | +1.9 |
| Take LSD in private | 67.2 | 65.1 | 63.3 | 62.7 | 62.4 | 65.8 | 62.6 | 67.1 | 66.7 | 67.9 | 70.6 | 69.0 | 70.8 | 71.5 | 71.6 | 72.9 | +1.3 |
| Take LSD in public places | 85.8 | 81.9 | 79.3 | 80.7 | 81.5 | 82.8 | 80.7 | 82.1 | 82.8 | 82.4 | 84.8 | 84.9 | 85.2 | 86.0 | 84.4 | 84.9 | +0.5 |
| Take heroin in private | 76.3 | 72.4 | 69.2 | 68.8 | 68.5 | 70.3 | 68.8 | 69.3 | 69.7 | 69.8 | 73.3 | 71.7 | 75.0 | 74.2 | 74.4 | 76.4 | +2.0 |
| Take heroin in public places | 90.1 | 84.8 | 81.0 | 82.5 | 84.0 | 83.8 | 82.4 | 82.5 | 83.7 | 83.4 | 85.8 | 85.0 | 86.2 | 86.6 | 85.2 | 86.7 | +1.5 |
| Take amphetamines or barbiturates in private | 57.2 | 53.5 | 52.8 | 52.2 | 53.4 | 54.1 | 52.0 | 53.5 | 52.8 | 54.4 | 56.3 | 56.8 | 59.1 | 60.2 | 61.1 | 64.5 | +3.4s |
| Take amphetamines or barbiturates in public places | 79.6 | 76.1 | 73.7 | 75.8 | 77.3 | 76.1 | 74.2 | 75.5 | 76.7 | 76.8 | 78.3 | 79.1 | 79.8 | 80.2 | 79.2 | 81.6 | +2.4 |
| Get drunk in private | 14.1 | 15.6 | 18.6 | 17.4 | 16.8 | 16.7 | 19.6 | 19.4 | 19.9 | 19.7 | 19.8 | 18.5 | 18.6 | 19.2 | 20.2 | 23.0 | +2.8s |
| Get drunk in public places | 55.7 | 50.7 | 49.0 | 50.3 | 50.4 | 48.3 | 49.1 | 50.7 | 52.2 | 51.1 | 53.1 | 52.2 | 53.2 | 53.8 | 52.6 | 54.6 | +2.0 |
| Smoke cigarettes in certain specified public places | NA | NA | 42.0 | 42.2 | 43.1 | 42.8 | 43.0 | 42.0 | 40.5 | 39.2 | 42.8 | 45.1 | 44.4 | 48.4 | 44.5 | 47.3 | +2.8 |
| Approx. N = | (2620) | (2959) | (3113) | (3783) | (3288) | (3224) | (3611) | (3627) | (3315) | (3236) | (3254) | (3074) | (3332) | (3288) | (2813) | (2571) | |

NOTE: Level of significance of difference between the two most recent classes: s = .05, ss = .01, sss = .001. NA indicates data not available.

[a] Answer alternatives were: (1) No, (2) Not sure, and (3) Yes.

[b] The 1975 question asked about people who are "20 or older."

pling of illicit and licit drugs and asks whether their use should be prohibited by law. A distinction is consistently made between use in public and use in private—a distinction which proved quite important in the results.

### *Attitudes in 1990*

- The great majority of seniors believe that the use in public of ***illicit drugs other than marijuana*** should be prohibited by law (e.g., 82% in the case of amphetamines and barbiturates, 87% for heroin). While the distinction between attitudes about the legality of use in public versus private settings proved to be an important one, today only about 10% to 20% fewer think the use of these drugs in private should be legally prohibited.

- The great majority (82%) also favor legally prohibiting ***marijuana*** use in public places, despite the fact that roughly half of them have used marijuana themselves, and despite the fact that they do not judge it to be as dangerous a drug as the others. But considerably fewer (56%) feel that marijuana use in private should be prohibited.

- Fully 47% believe that ***cigarette*** smoking in public places should be prohibited by law. Only slightly more think ***getting drunk*** in such places should be prohibited (55%).

- For ***all drugs***, fewer students believe that use in private settings should be illegal, sometimes substantially fewer.

### *Trends in These Attitudes*

- From 1975 through 1977 there was a modest decline (shifts of 4% to 7%, depending on the substance) in the proportion of seniors who favored legal prohibition of private use of ***any of the illicit drugs***. By 1990, however, virtually all of these proportions had increased.

- Over the past eleven years (from 1979 to 1990) there has been a very appreciable rise in the proportion favoring legal prohibition of ***marijuana*** use, either in private (up from 28% to 56%) or in public (up from 62% to 82%).

- For other illicit drugs, the changes are more modest, but between 1981 and 1987 all showed increased proportions favoring prohibition. Since 1987 ***LSD*** and ***heroin*** did not show much further change, while support for legal prohibition continued to rise for ***amphetamines*** and ***barbiturates***.

- There was very little change between 1977 (the year of first measurement) and 1985 in the proportion of seniors who say ***smoking cigarettes*** in certain specified public places should be prohibited by law. In 1977 some 42% held this view vs. 43% in 1985. Since then there has been a slight upward drift in the proportion favoring prohibiting smoking in specified public places. Were the question more specific as to the places in which smoking might be prohibited (e.g., hospitals, restaurants, etc.) there might be greater support.

- There has been rather little change in seniors' preferences about the illegality of ***drunkenness*** in public or private places. The stability of attitudes about the preferred legality for this culturally ingrained drug-using behavior contrasts sharply with the lability of preferences regarding the legality of the illicit drugs. In 1990 there was some upward shift in favoring prohibition of drunkenness in both public and private places. Whether this indicates the beginning of a longer-term trend remains to be seen.

## THE LEGAL STATUS OF MARIJUANA

Another set of questions goes into more detail about what legal sanctions, if any, students think should be attached to the use and sale of marijuana. Respondents also are asked to guess how they would be likely to react to legalized use and sale of the drug. While the answers to such a question must be interpreted cautiously, a special study of the effects of marijuana decriminalization at the state level, conducted as part of the Monitoring the Future series, suggests that in the aggregate their predictions about how they would react proved relatively accurate.[19]

### *Attitudes and Predicted Response to Legalization*

- As shown in Table 21, less than one-sixth of all seniors believe marijuana use should be entirely legal (16%). About one in six (17%) feel it should be treated as a minor violation—like a parking ticket—but not as a crime. Another 14% indicate no opinion, leaving roughly half (53%) who feel it still should be treated as a crime.

- Asked whether they thought it should be legal to sell marijuana if it were legal to use it, half (48%) said "yes." However, nearly all of these respondents would permit sale *only* to adults.

- High school seniors predict that they would be little affected personally by the legalization of either the sale or the use of marijuana. Nearly three-fourths (73%) of the respondents say that they would not use the drug even if it were legal to buy and use, and another 11% indicate they would use it about as often as they do now, or less. Only 3% say they would use it more often than at present and only another 7% think they would try it. Some 6% say they do not know how they would react. The special study of the effects of decriminalization at the state level during the late seventies (which falls well short of the hypothetical situation posited in

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[19] See Johnston, L.D., O'Malley, P.M., & Bachman, J.G. (1981). *Marijuana decriminalization: The impact on youth, 1975–1980* (Monitoring the Future Occasional Paper No. 13). Ann Arbor: Institute for Social Research.

# TABLE 21

## Trends in Seniors' Attitudes Regarding Marijuana Laws

(Entries are percentages)

| *Q. There has been a great deal of public debate about whether marijuana use should be legal. Which of the following policies would you favor?* | Class of 1975 | Class of 1976 | Class of 1977 | Class of 1978 | Class of 1979 | Class of 1980 | Class of 1981 | Class of 1982 | Class of 1983 | Class of 1984 | Class of 1985 | Class of 1986 | Class of 1987 | Class of 1988 | Class of 1989 | Class of 1990 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Using marijuana should be entirely legal | 27.3 | 32.6 | 33.6 | 32.9 | 32.1 | 26.3 | 23.1 | 20.0 | 18.9 | 18.6 | 16.6 | 14.9 | 15.4 | 15.1 | 16.6 | 15.9 |
| It should be a minor violation like a parking ticket but not a crime | 25.3 | 29.0 | 31.4 | 30.2 | 30.1 | 30.9 | 29.3 | 28.2 | 26.3 | 23.6 | 25.7 | 25.9 | 24.6 | 21.9 | 18.9 | 17.4 |
| It should be a crime | 30.5 | 25.4 | 21.7 | 22.2 | 24.0 | 26.4 | 32.1 | 34.7 | 36.7 | 40.6 | 40.8 | 42.5 | 45.3 | 49.2 | 50.0 | 53.2 |
| Don't know | 16.8 | 13.0 | 13.4 | 14.6 | 13.8 | 16.4 | 15.4 | 17.1 | 18.1 | 17.2 | 16.9 | 16.7 | 14.8 | 13.9 | 14.6 | 13.6 |
| *Q. If it were legal for people to USE marijuana, should it also be legal to SELL marijuana?* | | | | | | | | | | | | | | | | |
| No | 27.8 | 23.0 | 22.5 | 21.8 | 22.9 | 25.0 | 27.7 | 29.3 | 27.4 | 30.9 | 32.6 | 33.0 | 36.0 | 36.8 | 38.8 | 40.1 |
| Yes, but only to adults | 37.1 | 49.8 | 52.1 | 53.6 | 53.2 | 51.8 | 48.6 | 46.2 | 47.6 | 45.8 | 43.2 | 42.2 | 41.2 | 39.9 | 37.9 | 38.8 |
| Yes, to anyone | 16.2 | 13.3 | 12.7 | 12.0 | 11.3 | 9.6 | 10.5 | 10.7 | 10.5 | 10.6 | 11.2 | 10.4 | 9.2 | 10.5 | 9.2 | 9.6 |
| Don't know | 18.9 | 13.9 | 12.7 | 12.6 | 12.6 | 13.6 | 13.2 | 13.8 | 14.6 | 12.8 | 13.1 | 14.4 | 13.6 | 12.8 | 14.1 | 11.6 |
| *Q. If marijuana were legal to use and legally available, which of the following would you be most likely to do?* | | | | | | | | | | | | | | | | |
| Not use it, even if it were legal and available | 53.2 | 50.4 | 50.6 | 46.4 | 50.2 | 53.3 | 55.2 | 60.0 | 60.1 | 62.0 | 63.0 | 62.4 | 64.9 | 69.0 | 70.1 | 72.9 |
| Try it | 8.2 | 8.1 | 7.0 | 7.1 | 6.1 | 6.8 | 6.0 | 6.3 | 7.2 | 6.6 | 7.5 | 7.6 | 7.3 | 7.1 | 6.7 | 7.0 |
| Use it about as often as I do now | 22.7 | 24.7 | 26.8 | 30.9 | 29.1 | 27.3 | 24.8 | 21.7 | 19.8 | 19.1 | 17.7 | 16.8 | 16.2 | 13.1 | 13.0 | 10.1 |
| Use it more often than I do now | 6.0 | 7.1 | 7.4 | 6.3 | 6.0 | 4.2 | 4.7 | 3.8 | 4.9 | 4.7 | 3.7 | 5.0 | 4.1 | 4.3 | 2.4 | 2.7 |
| Use it less than I do now | 1.3 | 1.5 | 1.5 | 2.7 | 2.5 | 2.6 | 2.5 | 2.2 | 1.5 | 1.6 | 1.6 | 2.0 | 1.3 | 1.5 | 2.1 | 1.1 |
| Don't know | 8.5 | 8.1 | 6.6 | 6.7 | 6.1 | 5.9 | 6.9 | 6.0 | 6.4 | 6.0 | 6.5 | 6.1 | 6.3 | 5.0 | 5.7 | 6.1 |
| Approx. N = | (2600) | (2970) | (3110) | (3710) | (3280) | (3210) | (3600) | (3620) | (3300) | (3220) | (3230) | (3080) | (3330) | (3277) | (2812) | (2570) |

this question) revealed no evidence of any impact on the use of marijuana, nor even on attitudes and beliefs concerning its use. On the other hand, the times today are very different and the symbolic message of legalizing or decriminalizing marijuana might be different.

### *Trends in Attitudes and Predicted Responses*

- Between 1976 and 1979 seniors' preferences for decriminalization or legalization remained fairly constant; but in the past eleven years the proportion favoring outright legalization dropped by half (from 32% in 1979 to 16% in 1990), while there was a corresponding doubling in the proportion saying marijuana use should be a crime (from 24% to 53%).

- Also reflecting this increased conservatism about marijuana, somewhat fewer now would support legalized ***sale*** even if ***use*** were to be made legal (down from 65% in 1979 to 48% in 1990).

- The predictions about personal marijuana use, if sale and use were legalized, have been quite similar for all high school classes. The slight shifts being observed are mostly attributable to the changing proportions of seniors who actually use marijuana.

- In sum, in recent years American young people have become much more supportive of legal prohibitions on the use of illegal drugs, whether used in private or in public. The fairly tolerant attitudes of students in the late 70's toward marijuana use have eroded considerably; more than twice as many now think it should be treated as a criminal offense, and correspondingly fewer think it should be entirely legal to use.

### Chapter 9

# THE SOCIAL MILIEU FOR SENIORS

The preceding chapter dealt with seniors' own attitudes about various forms of drug use. Attitudes about drugs, as well as drug-related behaviors, obviously do not occur in a social vacuum. Drugs are discussed in the media; they are a topic of considerable interest and conversation among young people; they are also a matter of much concern to parents, concern which often is strongly communicated to their children. Young people are known to be affected by the actual drug-taking behaviors of their friends and acquaintances, as well as by the availability of the various drugs. This section presents data on several of these relevant aspects of the social milieu.

We begin with two sets of questions about parental and peer attitudes, questions which closely parallel the questions about respondents' own attitudes about drug use, discussed in the preceding chapter. Since measures of parental attitudes have not been carried in the study in recent years, those discussed here are based on the 1979 results.

## PERCEIVED ATTITUDES OF PARENTS AND FRIENDS

### *Perceptions of Parental Attitudes*

- A large majority of seniors in 1979 felt that their parents would disapprove or strongly disapprove of their exhibiting ***any of the drug use behaviors*** which are listed in Table 22. (The data for the perceived parental attitudes are not given in tabular form, but are displayed in Figures 26a and b and 27.) Given the changing climate in recent years, as exemplified by the dramatic shifts in students' attitudes, it seems likely that parental attitudes would be even more restrictive today.

- Drug use appears to constitute one area in which the position of parents approaches complete unanimity. Over 97% of seniors said that their parents would disapprove or strongly disapprove of their smoking ***marijuana*** regularly, even trying ***LSD*** or ***amphetamines***, or having four or five ***drinks*** every day. (Although the questions did not include more frequent use of LSD or amphetamines, or any use of heroin, it is obvious that if such behaviors had been included in the list virtually all seniors would have indicated parental disapproval.)

## TABLE 22

## Trends in Proportion of Friends Disapproving of Drug Use

All Seniors

| *Q. How do you think your close friends feel (or would feel) about you . . .* | Adjustment Factor | Percentage saying friends disapprove[a] | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Class of 1975[b] | Class of 1976 | Class of 1977[b] | Class of 1978 | Class of 1979[b] | Class of 1980 | Class of 1981 | Class of 1982 | Class of 1983 | Class of 1984 | Class of 1985 | Class of 1986 | Class of 1987 | Class of 1988 | Class of 1989 | Class of 1990 | '89–'90 change |
| Trying marijuana once or twice | *(-0.5)* | *44.3* | NA | *41.8* | NA | *40.9* | 42.6 | 46.4 | 50.3 | 52.0 | 54.1 | 54.7 | 56.7 | 58.0 | 62.9 | 63.7 | 70.3 | +6.6sss |
| Smoking marijuana occasionally | *(+0.8)* | *54.8* | NA | *49.0* | NA | *48.2* | 50.6 | 55.9 | 57.4 | 59.9 | 62.9 | 64.2 | 64.4 | 67.0 | 72.1 | 71.1 | 76.4 | +5.3ss |
| Smoking marijuana regularly | *(+4.6)* | *75.0* | NA | *69.1* | NA | *70.2* | 72.0 | 75.0 | 74.7 | 77.6 | 79.2 | 81.0 | 82.3 | 82.9 | 85.5 | 84.9 | 86.7 | +1.8 |
| Trying LSD once or twice | *(+2.0)* | *85.6* | NA | *86.6* | NA | *87.6* | 87.4 | 86.5 | 87.8 | 87.8 | 87.6 | 88.6 | 89.0 | 87.9 | 89.5 | 88.4 | 87.9 | -0.5 |
| Trying cocaine once or twice | | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 79.6 | 83.9 | 88.1 | 88.9 | 90.5 | +1.6 |
| Taking cocaine occasionally | | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 87.3 | 89.7 | 92.1 | 92.1 | 94.2 | +2.1s |
| Trying an amphetamine once or twice | *(+2.2)* | *78.8* | NA | *80.3* | NA | *81.0* | 78.9 | 74.4 | 75.7 | 76.8 | 77.0 | 77.0 | 79.4 | 80.0 | 82.3 | 84.1 | 84.2 | +0.1 |
| Taking one or two drinks nearly every day | *(+7.8)* | *67.2* | NA | *71.0* | NA | *71.0* | 70.5 | 69.5 | 71.9 | 71.7 | 73.6 | 75.4 | 75.9 | 71.8 | 74.9 | 76.4 | 79.0 | +2.6 |
| Taking four or five drinks every day | *(+9.3)* | *89.2* | NA | *88.1* | NA | *88.5* | 87.9 | 86.4 | 86.6 | 86.0 | 86.1 | 88.2 | 87.4 | 85.6 | 87.1 | 87.2 | 88.2 | +1.0 |
| Having five or more drinks once or twice every weekend | *(+4.7)* | *55.0* | NA | *53.4* | NA | *51.3* | 50.6 | 50.3 | 51.2 | 50.6 | 51.3 | 55.9 | 54.9 | 52.4 | 54.0 | 56.4 | 59.0 | +2.6 |
| Smoking one or more packs of cigarettes per day | *(+8.3)* | *63.6* | NA | *68.3* | NA | *73.4* | 74.4 | 73.8 | 70.3 | 72.2 | 73.9 | 73.7 | 76.2 | 74.2 | 76.4 | 74.4 | 75.3 | +0.9 |
| Approx. N = | | (2488) | (NA) | (2615) | (NA) | (2716) | (2766) | (3120) | (3024) | (2722) | (2721) | (2688) | (2639) | (2815) | (2778) | (2400) | (2184) | |

NOTE: Level of significance of difference between the two most recent classes: s = .05, ss = .01, sss = .001. NA indicates data not available.

[a] Answer alternatives were: (1) Don't disapprove, (2) Disapprove, and (3) Strongly disapprove. Percentages are shown for categories (2) and (3) combined.

[b] These figures have been adjusted by the factors reported in the first column to correct for a lack of comparability of question-context among administrations. (See text for discussion.)

- Even experimental use of ***marijuana*** was seen as a parentally disapproved activity by the great majority of the 1979 seniors (85%). Assuming that the students were generally correct about their parents' attitudes, these results clearly showed a substantial generational difference of opinion about this drug.

- Also likely to be perceived as rating high parental disapproval (92% disapproval) were ***occasional marijuana*** use, taking one or two ***drinks*** nearly every day, and pack-a-day ***cigarette*** smoking.

- Slightly lower proportions of seniors (85%) felt their parents would disapprove of their having five or more ***drinks*** once or twice every weekend. This happened to be exactly the same percentage as said that their parents would disapprove of simply experimenting with marijuana. considerably more tolerant parental attitude toward alcohol than marijuana. showing a considerably more tolerant parental attitude toward alcohol than marijuana.

### *Current Perceptions of Friends' Attitudes*

- A parallel set of questions asked respondents to estimate their friends' attitudes about drug use (Table 22). These questions ask. "How do you think your close friends feel (or would feel) about you [taking the specified drug at the specified level]. . .?" The highest levels of peer disapproval in 1990 for experimenting with a drug are associated with trying ***cocaine*** (91%) and trying ***LSD*** (88%). Presumably, if ***heroin*** or ***PCP*** were on the list they would receive very high peer disapproval, as well.

- Even experimenting with ***marijuana*** is now "out" with most seniors' friends (70%); and a very large majority think their friends would disapprove if they smoked marijuana regularly (87%).

- Three-quarters of all seniors think they would face peer disapproval if they smoked a pack or more of ***cigarettes daily*** (75%).

- While ***heavy drinking on weekends*** is judged by more than half (59%) to be disapproved of by their friends (many of whom exhibit that behavior themselves), substantially more (79%) think ***consumption of one or two drinks daily*** would be disapproved. The great majority (88%) would face the disapproval of their friends if they engaged in ***heavy daily drinking***.

- In sum, peer norms differ considerably for the various drugs and for varying degrees of involvement with those drugs, but overall they tend to be quite conservative. The great majority of seniors have friendship circles which do not condone use of the ***illicit drugs other than marijuana***, and 87% feel that their friends would disapprove of ***regular marijuana*** use. In fact, over two-thirds (70%) of them now believe their friends would disapprove of their even trying marijuana.

### *A Comparison of the Attitudes of Parents, Peers, and Respondents*

- A comparison of the perceptions of friends' disapproval with perceptions of parents' disapproval in the years for which comparison is possible shows several interesting findings.

- First there was rather little variability among different students in their perceptions of their parents' attitudes: on any of the drug behaviors listed nearly ***all*** said their parents would disapprove. Nor was there much variability among the different drugs in perceived parental attitudes. Peer norms varied much more from drug to drug. The net effect of these facts is likely to be that peer norms have a much greater chance of explaining variability in the respondent's own individual attitudes or use than parental norms, simply because the peer norms vary more. That is quite different than saying that parental attitudes do not matter, or even that they matter less than peer attitudes.

- Despite there being less variability in parental attitudes, the ***ordering*** of drug use behaviors was much the same for them as for peers (e.g., among the illicit drugs asked about, the highest frequencies of perceived disapproval were for trying cocaine, while the lowest frequencies were for trying marijuana).

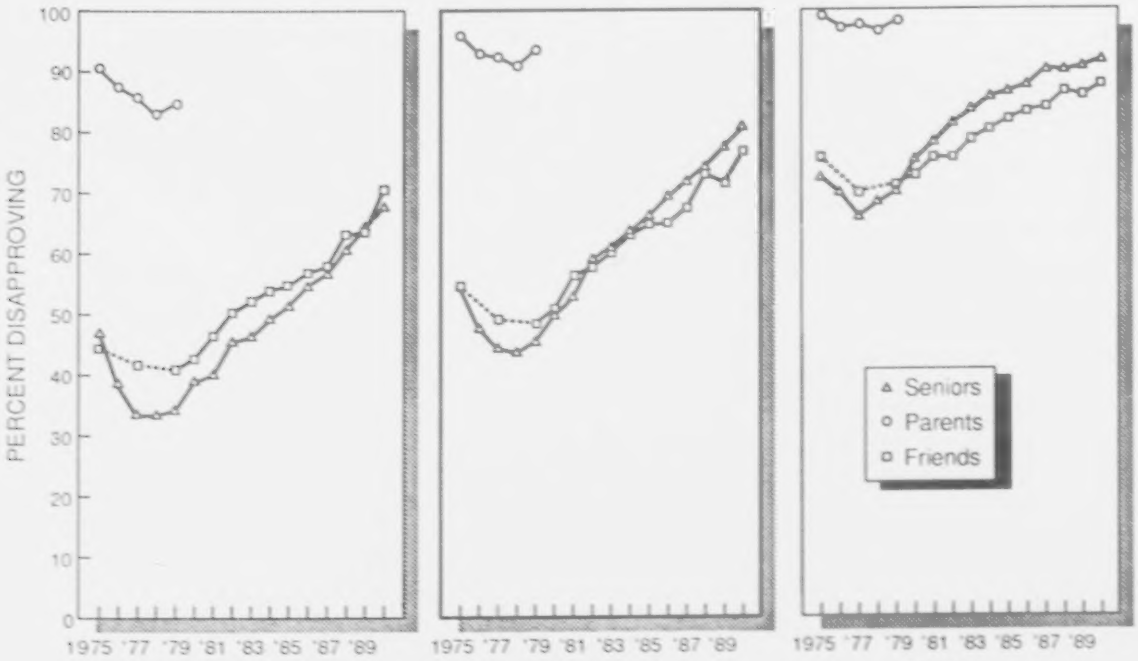
- A comparison with the seniors' own attitudes regarding drug use (see Figures 26a and b and 27) reveals that on the average they are much more in accord with their peers than with their parents. The differences between seniors' own disapproval ratings in 1979 and those attributed to their parents tended to be large, with parents seen as more conservative overall in relation to ***every drug***, licit or illicit. The largest difference occurred in the case of ***marijuana*** experimentation, where only 34% of seniors (in 1979) said they disapproved vs. 85% (of 1979 seniors) who said their parents would disapprove. Despite the great increase in seniors' own disapproval (up significantly to 68% in 1990), it remains the most controversial of the illicit drug-using behaviors listed here.

### *Trends in Perceptions of Parents' and Friends' Attitudes*

- Several important changes in the perceived attitudes of others have been taking place recently—and particularly among peers. These shifts are presented graphically in Figures 26a and b and 27. As can be seen in those figures, adjusted (dotted) trend lines have been introduced before 1980. This was done because we discovered that the deletion in 1980 of the questions about parents' attitudes—which up until then had been located immediately preceding the questions about friends' attitudes—removed what was judged to be an artifactual depression of the ratings of friends' attitudes, a phenomenon known as a question-context effect. This effect was particularly evident in the trend lines dealing with alcohol use, where otherwise smooth lines showed abrupt upward shifts in

FIGURE 26a

**Trends in Disapproval of Illicit Drug Use**
Seniors, Parents, and Peers



Trying marijuana once or twice

Smoking marijuana occasionally

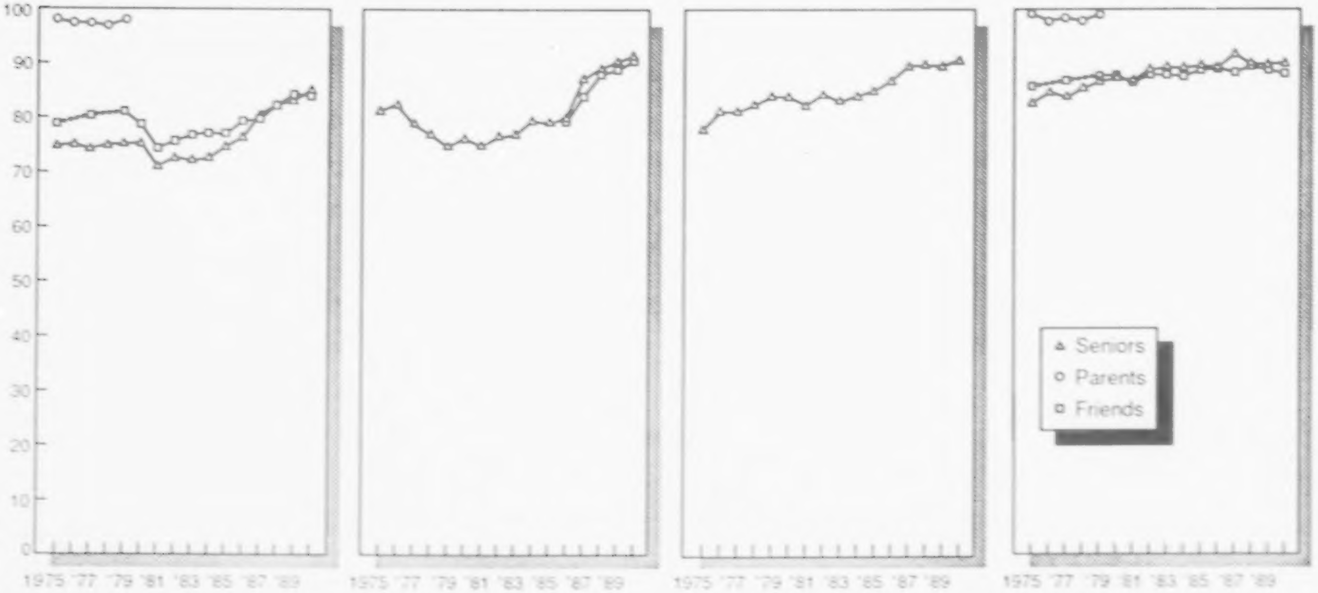
Smoking marijuana regularly

Note: Points connected by dotted lines have been adjusted because of lack of comparability of question-context among administrations. (See text for discussion.)

FIGURE 26b

## Trends in Disapproval of Illicit Drug Use

Seniors, Parents, and Peers



Trying an amphetamine once or twice

Trying cocaine once or twice

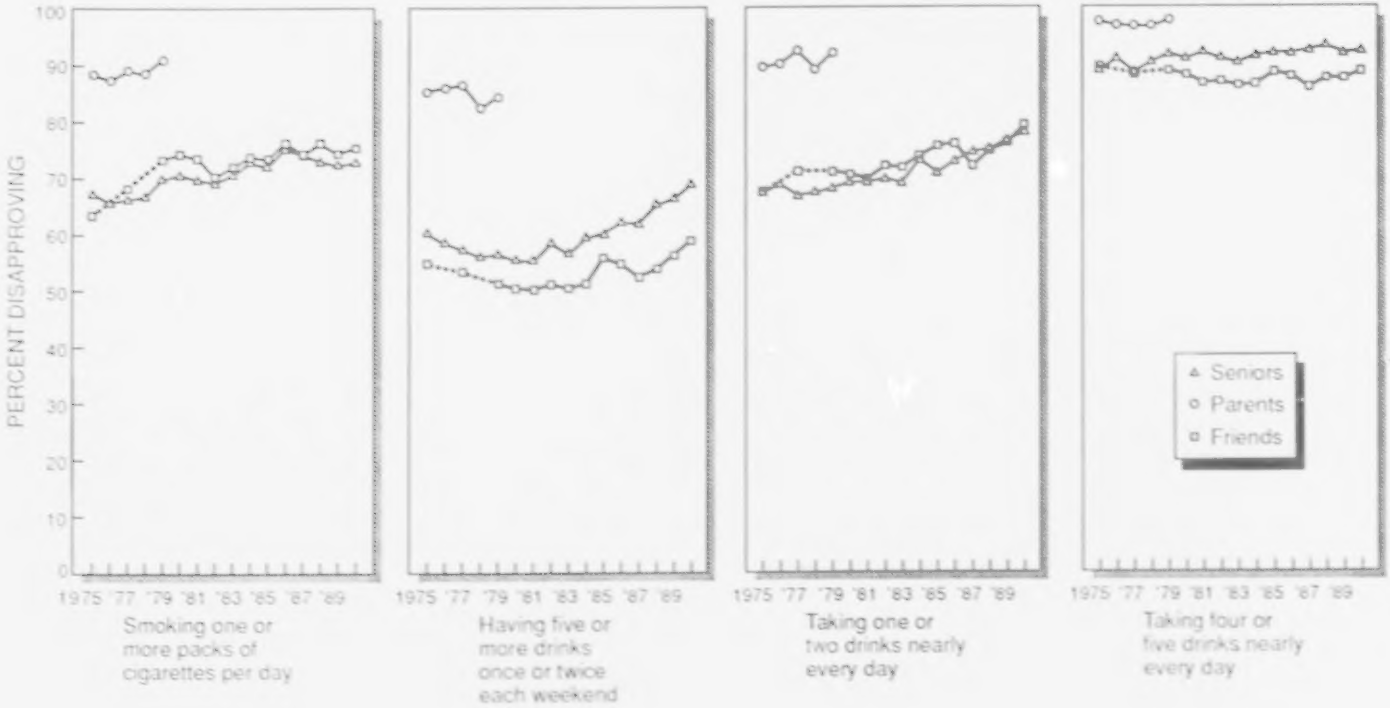
Trying a barbiturate once or twice

Trying LSD once or twice

Note: Points connected by dotted lines have been adjusted because of lack of comparability of question-context among administrations. (See text for discussion.)

FIGURE 27

**Trends in Disapproval of Licit Drug Use**
Seniors, Parents, and Peers



Smoking one or more packs of cigarettes per day

Having five or more drinks once or twice each weekend

Taking one or two drinks nearly every day

Taking four or five drinks nearly every day

Note: Points connected by dotted lines have been adjusted because of lack of comparability of question-context among administrations. (See text for discussion.)

1980. It appears that when questions about parents' attitudes were present, respondents tended to understate peer disapproval in order to emphasize the difference in attitudes between their parents and their peers. In the adjusted lines, we have attempted to correct for that artifactual depression in the 1975, 1977, and 1979 scores.[20] We think the adjusted trend lines give a more accurate picture of the change taking place. For some reason, the question-context effect seems to have more influence on the questions dealing with cigarettes and alcohol than on those dealing with illicit drugs.

- For each level of ***marijuana*** use—trying once or twice, occasional use, regular use—there had been a drop in perceived disapproval for both parents and friends up until 1977 or 1978. We know from our other findings that these perceptions correctly reflected actual shifts in the attitudes of their peer groups—that is, that acceptance of marijuana was in fact increasing among seniors (see Figures 24a and b). There is little reason to suppose such perceptions are less accurate in reflecting shifts in parents' attitudes. Therefore, we conclude that the social norms regarding marijuana use among adolescents had been relaxing before 1979. However, consistent with the seniors' reports about their own attitudes, there has been a sharp reversal in peer norms regarding all levels of marijuana use.

- Until 1979 there had been relatively little change in either self-reported attitudes or perceived peer attitudes toward ***amphetamine*** use, but in 1981 both measures showed significant and parallel dips in disapproval (as use rose sharply). Since 1981 disapproval has been rising (as use has declined), and peer disapproval is now at the highest level recorded in the study (84%).

- Peer disapproval of ***LSD*** has been high and relatively stable for some years.

- While perceived attitudes of friends were not asked for ***cocaine*** (until 1986), or for ***barbiturates***, it seems likely that such perceptions moved in parallel to the seniors' own attitudes, since such parallel movement has been observed for virtually all other drugs. (See Figures 26a and b.) This would suggest that disapproval has risen gradually but steadily for ***barbiturate*** use since 1975. Regarding experimenting with ***cocaine***, seniors' own disapproval dropped from 1975 to 1979, but then rose very gradually through 1990. Questions on perceived attitudes of friends for experimental and occasional use of cocaine were added in 1986. Between 1986 and 1990 these show a sharp increase in peer disapproval of experimental or occasional cocaine use, with the proportion saying that their close friends would disapprove of their experimenting with cocaine rising from 80% in 1986 to 91% in 1990.

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[20] The correction evolved as follows: We assumed that a more accurate estimate of the true change between 1979 and 1980 could be obtained by taking an average of the changes observed in the year prior and the year subsequent, rather than by taking the observed change (which we knew to contain the effect of a change in question context). We thus calculated an *adjusted* 1979–1980 change score by taking an average of one-half the 1977–1979 change score (our best estimate of the 1978–1979 change) plus the 1980–1981 change score. This estimated change score was then subtracted from the observed change score for 1979–1980, the difference being our estimate of the amount by which peer disapproval of the behavior in question was being understated because of the context in which the questions occurred prior to 1980. The 1975, 1977, and 1979 observations were then adjusted upward by the amount of that correction factor. (Table 20 shows the correction factors in the first column.)

- Regarding ***regular cigarette smoking***, the proportion of seniors saying that their friends would disapprove of them smoking a pack-a-day or more rose from 64% (adjusted version) in 1975 to 74% in 1980. Beyond 1980, however, perceived peer disapproval has fluctuated by only a few percentage points, and it remains at 75% in 1990.

- For ***alcohol*** the perceived peer norms for ***weekend binge drinking*** moved pretty much in parallel with seniors' statements about their personal disapproval through 1985. Since then some divergence appears to have occurred, with seniors' reports of their own attitudes becoming less tolerant as perceived peer norms took longer to begin trending upward.

  ***Heavy daily drinking*** is seen by the great majority (88% in 1990) as disapproved by peers, with little systematic change over more than a decade. Taking one or two drinks nearly every day has seen a growth in peer disapproval since 1987.

## EXPOSURE TO DRUG USE BY FRIENDS AND OTHERS

It is generally acknowledged that much of youthful drug use is initiated through a peer social-learning process; and research has shown a high correlation between an individual's illicit drug use and that of his or her friends. Such a correlation can, and probably does, reflect several different causal patterns: (a) a person with friends who use a drug will be more likely to try the drug; (b) conversely, the individual who is already using a drug will be likely to introduce friends to the experience; and (c) one who is already a user is more likely to establish friendships with others who also are users.

Given the potential importance of exposure to drug use by others, we felt it would be useful to monitor seniors' association with others taking drugs, as well as seniors' perceptions about the extent to which their friends use drugs. Two sets of questions, each covering all or nearly all of the categories of drug use treated in this report, asked seniors to indicate (a) how often during the past twelve months they were around people taking each of the drugs to get high or for "kicks," and (b) what proportion of their own friends use each of the drugs. (The questions dealing with friends' use are shown in Table 23. The data dealing with direct exposure to use may be found in Table 24.) Obviously, responses to these two questions are highly correlated with the respondents' own drug use; thus, for example, seniors who have recently used marijuana are much more likely to report that they have been around others getting high on marijuana, and that most of their friends use it.

### *Exposure to Drug Use by Seniors in 1990*

- A comparison of the aggregated responses about friends' use, and about being around people in the last twelve months who were using various drugs to get high, (in which questions reside on a different form of the questionnaire), reveals a high degree of correspondence between these two indicators of exposure. For each drug, the proportion of respondents saying "none" of their friends use it is fairly close to the proportion who say that during the last twelve months they have not been around anyone who was using that drug to get high. Similarly, the proportion saying they are "often" around people getting high on a given drug is roughly the same as the proportion reporting that "most" or "all" of their friends use that drug.

- As would be expected, reports of exposure and friends' use closely parallel the figures on seniors' own use (compare Figures 2 and 28). It thus comes as no surprise that the highest levels of exposure involve ***alcohol***; a majority (56%) say they are "often" around people using it to get high. What *may* come as a surprise is that fully 28% of all seniors say that most or all of their friends go so far as to ***get drunk*** at least once a week. (This *is* consistent, however, with the fact that 32% said they personally had taken five or more drinks in a row at least once during the prior two weeks.)

- The drug to which students are next most frequently exposed is ***marijuana***. Only 37% report no exposure during the year. Some 18% are "often" around people using it to get high, and another 21% are exposed "occasionally." But only one in ten (10%) now say that most or all of their friends smoke marijuana.

- After marijuana comes ***amphetamines***, the third most widely used class of illicit drugs, with 28% of seniors reporting some exposure to use in the prior year, and 29% saying they have friends who use.

- ***Cocaine***, exposure is now very close to that for amphetamines. Some 28% of all seniors have been around someone using it to get high over the past year, and a third (32%) say they have some friends who use it.

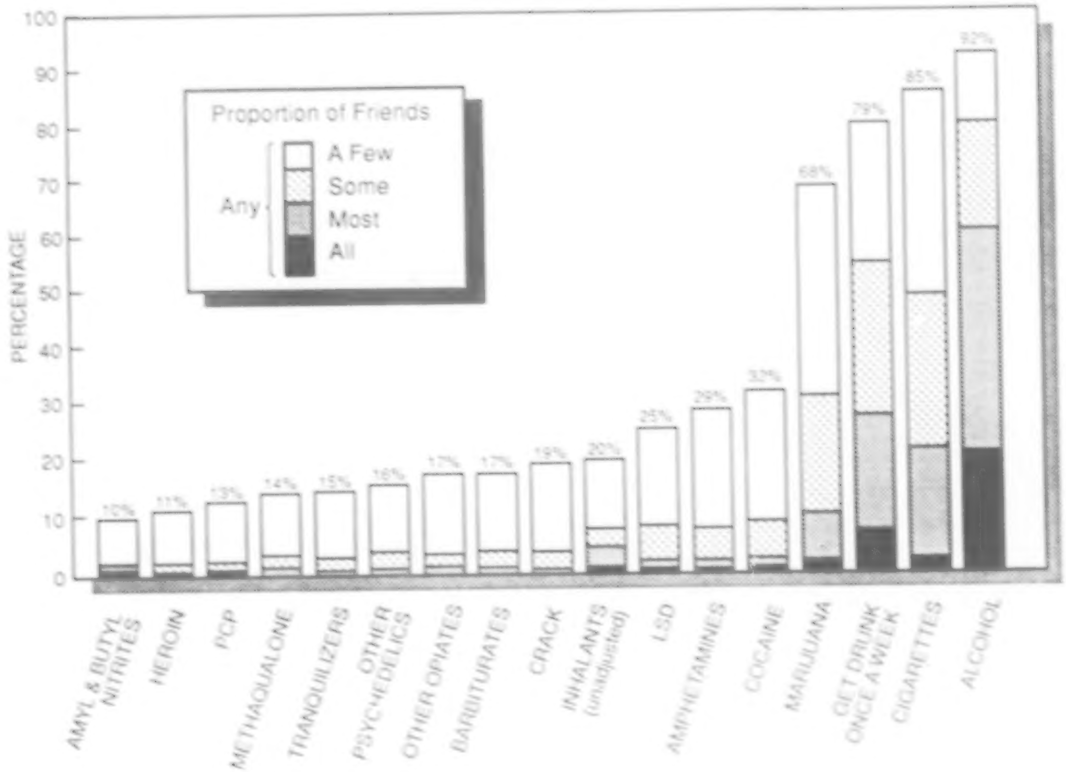
- For the ***remaining illicit drugs*** there are far lower rates, with ***any*** exposure to use in the past year ranging from 16% for tranquilizers down to 5% for heroin.

- Over half of all seniors (55%) report ***no*** exposure to ***illicit drugs other than marijuana*** during the prior year, but only a third (32%) report no exposure to ***any illicit drug*** during the year.

- Regarding ***cigarette smoking***, one in every five seniors (21%) reports that most or all of his or her friends smoke, and 85% have at least some friends who smoke.

FIGURE 28

**Proportion of Friends Using Each Drug as Estimated by Seniors**
Class of 1990



## TABLE 23

## Trends in Proportion of Friends Using Drugs as Estimated by Seniors

(Entries are percentages)

| *Q. How many of your friends would you estimate . . .* | Class of 1975 | Class of 1976 | Class of 1977 | Class of 1978 | Class of 1979 | Class of 1980 | Class of 1981 | Class of 1982 | Class of 1983 | Class of 1984 | Class of 1985 | Class of 1986 | Class of 1987 | Class of 1988 | Class of 1989 | Class of 1990 | '89–'90 change |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Take any illicit drug[a] | | | | | | | | | | | | | | | | | |
| % saying none | 14.2 | 15.4 | 13.1 | 12.5 | 11.0 | 12.5 | 14.6 | 13.7 | 17.4 | 19.0 | 17.6 | 17.8 | 18.3 | 20.9 | 23.1 | 29.0 | +5.9sss |
| % saying most or all | 31.9 | 31.7 | 33.2 | 36.3 | 37.0 | 32.5 | 29.8 | 26.5 | 23.8 | 20.9 | 22.7 | 21.5 | 18.6 | 15.8 | 15.7 | 11.6 | -4.1ss |
| Take any illicit drug[a] other than marijuana | | | | | | | | | | | | | | | | | |
| % saying none | 33.3 | 44.5 | 42.5 | 43.6 | 38.7 | 37.6 | 36.7 | 35.3 | 38.8 | 38.7 | 38.2 | 36.7 | 37.6 | 43.5 | 43.8 | 49.9 | +6.1sss |
| % saying most or all | 10.6 | 8.9 | 7.7 | 8.5 | 10.4 | 11.1 | 11.9 | 10.9 | 11.0 | 10.3 | 10.4 | 10.3 | 9.2 | 6.9 | 7.7 | 5.1 | -2.6ss |
| Smoke marijuana | | | | | | | | | | | | | | | | | |
| % saying none | 17.0 | 17.1 | 14.1 | 13.9 | 12.4 | 13.6 | 17.0 | 15.6 | 19.7 | 22.3 | 20.5 | 20.8 | 21.6 | 24.7 | 27.5 | 31.7 | +4.2ss |
| % saying most or all | 30.3 | 30.6 | 32.3 | 35.3 | 35.5 | 31.3 | 27.7 | 23.8 | 21.7 | 18.3 | 19.8 | 18.2 | 15.8 | 13.6 | 13.4 | 10.1 | -3.3ss |
| Use inhalants | | | | | | | | | | | | | | | | | |
| % saying none | 75.7 | 81.4 | 81.1 | 80.0 | 80.9 | 82.2 | 83.5 | 81.6 | 83.9 | 80.7 | 78.8 | 77.6 | 75.3 | 79.2 | 77.9 | 80.0 | +2.1 |
| % saying most or all | 1.1 | 1.1 | 1.0 | 1.1 | 1.1 | 1.2 | 0.9 | 1.3 | 1.1 | 1.1 | 1.5 | 2.0 | 1.9 | 1.2 | 1.9 | 1.0 | -0.9s |
| Use nitrites | | | | | | | | | | | | | | | | | |
| % saying none | NA | NA | NA | NA | 78.4 | 81.0 | 82.6 | 82.5 | 85.5 | 85.0 | 84.4 | 82.0 | 81.7 | 86.4 | 86.7 | 89.6 | +2.9s |
| % saying most or all | NA | NA | NA | NA | 1.9 | 1.3 | 1.2 | 0.9 | 0.7 | 1.2 | 1.0 | 1.2 | 1.3 | 0.7 | 0.9 | 0.6 | -0.3 |
| Take LSD | | | | | | | | | | | | | | | | | |
| % saying none | 63.5 | 69.4 | 68.1 | 70.1 | 71.1 | 71.9 | 71.5 | 72.2 | 76.0 | 76.1 | 75.6 | 75.5 | 74.7 | 75.9 | 74.8 | 75.0 | +0.2 |
| % saying most or all | 2.7 | 2.8 | 3.0 | 2.0 | 1.9 | 1.8 | 2.2 | 2.4 | 1.4 | 2.0 | 1.5 | 1.8 | 1.6 | 1.5 | 2.4 | 1.9 | -0.5 |
| Take other psychedelics | | | | | | | | | | | | | | | | | |
| % saying none | 58.8 | 69.7 | 68.6 | 70.8 | 71.8 | 71.8 | 73.7 | 74.4 | 77.9 | 78.7 | 78.0 | 77.7 | 78.3 | 82.2 | 81.9 | 84.1 | +2.2 |
| % saying most or all | 4.7 | 3.0 | 2.8 | 2.0 | 2.2 | 2.2 | 2.1 | 1.9 | 1.6 | 1.9 | 1.4 | 1.3 | 1.2 | 0.9 | 1.4 | 1.0 | -0.4 |
| Take PCP | | | | | | | | | | | | | | | | | |
| % saying none | NA | NA | NA | NA | 72.2 | 77.8 | 82.8 | 82.7 | 85.8 | 85.8 | 84.1 | 83.9 | 84.5 | 86.5 | 85.3 | 87.0 | +1.7 |
| % saying most or all | NA | NA | NA | NA | 1.7 | 1.6 | 0.9 | 0.9 | 1.1 | 1.1 | 1.2 | 1.2 | 1.1 | 0.8 | 1.2 | 0.5 | -0.7s |
| Take cocaine | | | | | | | | | | | | | | | | | |
| % saying none | 66.4 | 71.2 | 69.9 | 66.8 | 61.1 | 58.4 | 59.9 | 59.3 | 62.4 | 61.1 | 56.2 | 54.4 | 56.3 | 62.3 | 62.6 | 68.3 | +5.7ss |
| % saying most or all | 3.4 | 3.2 | 3.6 | 4.0 | 6.0 | 6.1 | 6.3 | 4.9 | 5.1 | 5.1 | 5.8 | 6.2 | 5.1 | 3.4 | 3.7 | 2.1 | -1.6ss |
| Take "crack" | | | | | | | | | | | | | | | | | |
| % saying none | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 72.6 | 74.6 | 73.9 | 80.8 | +6.9sss |
| % saying most or all | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 2.2 | 1.1 | 2.1 | 0.6 | -1.5sss |

(Table continued on next page)

## TABLE 23 (cont.)

### Trends in Proportion of Friends Using Drugs as Estimated by Seniors

(Entries are percentages)

| *Q. How many of your friends would you estimate . . .* | Class of 1975 | Class of 1976 | Class of 1977 | Class of 1978 | Class of 1979 | Class of 1980 | Class of 1981 | Class of 1982 | Class of 1983 | Class of 1984 | Class of 1985 | Class of 1986 | Class of 1987 | Class of 1988 | Class of 1989 | Class of 1990 | '89–'90 change |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Take heroin | | | | | | | | | | | | | | | | | |
| % saying none | 84.8 | 86.4 | 87.1 | 85.7 | 87.1 | 87.0 | 87.5 | 86.8 | 88.0 | 87.0 | 85.5 | 84.7 | 86.1 | 87.6 | 86.0 | 88.6 | +2.6s |
| % saying most or all | 0.7 | 0.8 | 0.7 | 0.9 | 0.5 | 1.0 | 0.5 | 0.7 | 0.8 | 0.8 | 0.9 | 1.1 | 0.9 | 0.7 | 1.1 | 0.4 | –0.7s |
| Take other narcotics | | | | | | | | | | | | | | | | | |
| % saying none | 71.2 | 75.9 | 76.3 | 76.8 | 76.9 | 77.6 | 76.9 | 76.1 | 79.2 | 78.6 | 77.2 | 78.2 | 76.8 | 80.8 | 80.8 | 82.8 | +2.0 |
| % saying most or all | 2.1 | 2.2 | 1.7 | 1.4 | 1.5 | 1.7 | 1.5 | 1.4 | 1.4 | 1.6 | 1.4 | 1.8 | 1.4 | 1.2 | 1.4 | 0.9 | –0.5 |
| Take amphetamines | | | | | | | | | | | | | | | | | |
| % saying none | 49.0 | 57.8 | 58.7 | 59.3 | 59.3 | 56.1 | 51.2 | 49.4 | 53.9 | 54.9 | 56.7 | 58.2 | 60.5 | 66.6 | 66.5 | 71.3 | +4.8ss |
| % saying most or all | 5.9 | 5.6 | 4.1 | 4.7 | 4.3 | 4.8 | 6.4 | 5.4 | 5.1 | 4.5 | 3.4 | 3.4 | 2.6 | 1.9 | 2.6 | 1.9 | –0.7 |
| Take barbiturates | | | | | | | | | | | | | | | | | |
| % saying none | 55.0 | 63.7 | 65.3 | 67.5 | 69.3 | 69.5 | 68.9 | 68.7 | 71.7 | 73.4 | 72.9 | 74.4 | 75.7 | 80.3 | 79.7 | 82.6 | +2.9s |
| % saying most or all | 4.3 | 3.5 | 3.0 | 2.3 | 2.1 | 2.6 | 2.1 | 1.8 | 1.7 | 1.7 | 1.6 | 1.4 | 1.1 | 1.1 | 1.4 | 0.6 | –0.8s |
| Take quaaludes | | | | | | | | | | | | | | | | | |
| % saying none | 68.3 | 73.0 | 71.7 | 73.0 | 72.3 | 67.5 | 65.0 | 64.5 | 70.3 | 73.9 | 74.0 | 76.5 | 78.0 | 82.9 | 83.4 | 85.7 | +2.3 |
| % saying most or all | 3.0 | 1.8 | 2.9 | 2.2 | 2.8 | 3.6 | 3.6 | 2.6 | 2.6 | 1.7 | 1.3 | 1.6 | 1.0 | 1.0 | 1.3 | 0.8 | –0.5 |
| Take tranquilizers | | | | | | | | | | | | | | | | | |
| % saying none | 54.4 | 63.7 | 62.2 | 65.2 | 68.0 | 70.3 | 70.5 | 70.1 | 73.3 | 73.4 | 74.2 | 75.8 | 76.7 | 80.1 | 82.0 | 85.1 | +3.1s |
| % saying most or all | 5.5 | 3.1 | 2.7 | 1.8 | 2.0 | 1.9 | 1.4 | 1.1 | 1.2 | 1.5 | 1.2 | 1.3 | 1.0 | 0.7 | 1.5 | 0.5 | –1.0ss |
| Drink alcoholic beverages | | | | | | | | | | | | | | | | | |
| % saying none | 3.3 | 4.9 | 5.6 | 5.1 | 4.6 | 3.9 | 5.3 | 4.3 | 4.5 | 5.4 | 5.4 | 4.4 | 4.6 | 4.3 | 4.9 | 8.0 | +3.1sss |
| % saying most or all | 68.4 | 64.7 | 66.2 | 68.9 | 68.5 | 68.9 | 67.7 | 69.7 | 69.0 | 66.6 | 66.0 | 68.0 | 71.8 | 68.1 | 67.1 | 60.5 | –6.6sss |
| Get drunk at least once a week | | | | | | | | | | | | | | | | | |
| % saying none | 17.6 | 19.3 | 19.0 | 18.0 | 16.7 | 16.9 | 18.2 | 16.9 | 16.1 | 18.5 | 17.5 | 15.3 | 14.4 | 15.6 | 17.2 | 20.8 | +3.6ss |
| % saying most or all | 30.1 | 26.6 | 27.6 | 30.2 | 32.0 | 30.1 | 29.4 | 29.9 | 31.0 | 29.6 | 29.9 | 31.8 | 31.3 | 29.6 | 31.1 | 27.5 | –3.6s |
| Smoke cigarettes | | | | | | | | | | | | | | | | | |
| % saying none | 4.8 | 6.3 | 6.3 | 6.9 | 7.9 | 9.4 | 11.5 | 11.7 | 13.0 | 14.0 | 13.0 | 12.2 | 11.7 | 12.3 | 13.5 | 15.1 | +1.6 |
| % saying most or all | 41.5 | 36.7 | 33.9 | 32.2 | 28.6 | 23.3 | 22.4 | 24.1 | 22.4 | 19.2 | 22.8 | 21.5 | 21.0 | 20.2 | 23.1 | 21.4 | –1.7 |
| Approx. N = | (2640) | (2697) | (2788) | (3247) | (2933) | (2987) | (3307) | (3303) | (3095) | (2945) | (2971) | (2798) | (2948) | (2961) | (2587) | (2361) | |

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NOTE: Level of significance of difference between the two most recent classes: s = .05, ss = .01, sss = .001. NA indicates data not available.

[a] These estimates were derived from responses to the questions listed above. "Any illicit drug" includes all of the drugs listed except cigarettes and alcohol. PCP and the nitrites were not included in 1975 through 1978. "Crack" was not included in 1975 through 1986.

### *Trends in Exposure to Drug Use by Seniors*

- During the two-year interval from 1976 to 1978, seniors' reports of exposure to ***marijuana*** use increased in just about the same proportion as percentages of actual monthly use. In 1979 both exposure to use and actual use stabilized, and since 1979 both have been dropping. The proportion saying they are often around people using marijuana decreased by more than half, from 39% in 1979 to 18% in 1990.

- ***Cocaine*** showed a consistent increase from 1976 to 1979 in the proportion of seniors exposed to users, as self-reported use rose. From 1979 to 1984 there was little change in exposure to use coinciding with a period of stability in self-reported use; but in 1985 and 1986 there was some increase in reported exposure to use. (These were the peak years in self-reported use.) Since 1986 the seniors' exposure to cocaine use has been dropping steadily, and the proportion saying they have any friends who use dropped from 46% in 1986 to 32% in 1990.

- The relative stability in self-report data on ***inhalant*** use (adjusted) seems to be reflected in the exposure data (except for a very slight drop in exposure in 1990, which is not found in the self-report data).

- Since 1979 there had been a gradual decrease in exposure to the use of ***psychedelics other than LSD*** which coincided with a continued decline in the self-reported use of this class of drugs.

- Exposure to ***tranquilizer*** use has generally been declining gradually since 1976, as has actual use.

- There also had been a gradual decrease in exposure to ***barbiturates*** and ***LSD***, from 1975 through 1980. Then exposure to the use of both of these drugs remained level for two years, as did the usage figures. After that, barbiturates showed a continuing decline through 1988 in both use and exposure to use before stabilizing. Exposure to LSD reached a low point by about 1983, and has been fairly stable since then.

- Trend data are available only since 1979 on friends' use of ***PCP*** or the ***nitrites***. For both drugs, exposure to friends' use had dropped significantly between 1979 and 1983. Only half as many seniors in 1983 (14%) said any of their friends used PCP compared with seniors in 1979 (28%). The corresponding drop for nitrites was from 22% to 15%. Since 1983 there has been some slight further decrease in exposure for both drugs.

- The proportion having any friends who used ***amphetamines*** rose from 41% to 51% between 1979 and 1982—paralleling the sharp increase in reported use over that period. The proportion saying

## TABLE 24
## Trends in Seniors' Exposure to Drug Use
(Entries are percentages)

| *Q. During the LAST 12 MONTHS how often have you been around people who were taking each of the following to get high or for "kicks"?* | Class of 1975 | Class of 1976 | Class of 1977 | Class of 1978 | Class of 1979 | Class of 1980 | Class of 1981 | Class of 1982 | Class of 1983 | Class of 1984 | Class of 1985 | Class of 1986 | Class of 1987 | Class of 1988 | Class of 1989 | Class of 1990 | '89–'90 change |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Any illicit drug[a] | | | | | | | | | | | | | | | | | |
| % saying not at all | NA | 17.4 | 16.5 | 15.1 | 15.0 | 15.7 | 17.3 | 18.6 | 20.6 | 22.1 | 22.3 | 24.5 | 26.1 | 28.7 | 31.4 | 32.4 | +1.0 |
| % saying often | NA | 34.8 | 39.0 | 40.7 | 40.4 | 36.3 | 36.1 | 31.4 | 29.8 | 28.3 | 27.2 | 26.3 | 23.3 | 20.8 | 22.0 | 20.7 | −1.3 |
| Any illicit drug[a] other than marijuana | | | | | | | | | | | | | | | | | |
| % saying not at all | NA | 44.9 | 44.2 | 44.7 | 41.7 | 41.5 | 37.4 | 37.5 | 40.6 | 40.2 | 40.7 | 44.7 | 48.3 | 52.2 | 52.9 | 54.6 | +1.7 |
| % saying often | NA | 11.8 | 13.5 | 12.1 | 13.7 | 14.1 | 17.1 | 16.6 | 14.2 | 14.6 | 12.9 | 12.1 | 10.2 | 9.6 | 10.7 | 9.2 | −1.5 |
| Marijuana | | | | | | | | | | | | | | | | | |
| % saying not at all | NA | 20.5 | 19.0 | 17.3 | 17.0 | 18.0 | 19.8 | 22.1 | 23.8 | 25.6 | 26.5 | 28.0 | 29.6 | 33.0 | 35.2 | 36.6 | +1.4 |
| % saying often | NA | 32.5 | 37.0 | 39.0 | 38.9 | 33.8 | 33.1 | 28.0 | 26.1 | 24.8 | 24.2 | 24.0 | 20.6 | 17.9 | 19.5 | 17.8 | −1.7 |
| LSD | | | | | | | | | | | | | | | | | |
| % saying not at all | NA | 78.8 | 80.0 | 81.9 | 81.9 | 82.8 | 82.6 | 83.9 | 86.2 | 87.5 | 86.8 | 86.9 | 87.1 | 86.6 | 85.0 | 85.1 | +0.1 |
| % saying often | NA | 2.2 | 2.0 | 1.8 | 2.0 | 1.4 | 2.0 | 1.9 | 1.4 | 1.5 | 1.3 | 1.6 | 1.8 | 1.6 | 2.2 | 2.6 | +0.4 |
| Other psychedelics | | | | | | | | | | | | | | | | | |
| % saying not at all | NA | 76.5 | 76.7 | 76.7 | 77.6 | 79.6 | 82.4 | 83.2 | 86.9 | 87.3 | 87.5 | 88.2 | 90.0 | 91.0 | 91.2 | 90.6 | −0.6 |
| % saying often | NA | 3.1 | 3.2 | 2.9 | 2.2 | 2.2 | 2.0 | 2.6 | 1.1 | 1.7 | 1.4 | 1.5 | 1.2 | 1.1 | 1.3 | 1.2 | −0.1 |
| Cocaine | | | | | | | | | | | | | | | | | |
| % saying not at all | NA | 77.0 | 73.4 | 69.8 | 64.0 | 62.3 | 63.7 | 65.1 | 66.7 | 64.4 | 61.7 | 62.6 | 65.1 | 69.8 | 69.8 | 72.3 | +2.5 |
| % saying often | NA | 3.0 | 3.7 | 4.6 | 6.8 | 5.9 | 6.6 | 6.6 | 5.2 | 6.7 | 7.1 | 7.8 | 5.9 | 5.1 | 5.4 | 4.7 | −0.7 |
| Heroin | | | | | | | | | | | | | | | | | |
| % saying not at all | NA | 91.4 | 90.3 | 91.8 | 92.4 | 92.6 | 93.4 | 92.9 | 94.9 | 94.0 | 94.5 | 94.0 | 94.2 | 94.3 | 93.5 | 94.6 | +1.1 |
| % saying often | NA | 0.8 | 1.1 | 0.9 | 0.7 | 0.4 | 0.6 | 1.0 | 0.7 | 1.1 | 0.5 | 1.0 | 0.9 | 0.8 | 1.0 | 0.5 | −0.5 |
| Other narcotics | | | | | | | | | | | | | | | | | |
| % saying not at all | NA | 81.9 | 81.3 | 81.8 | 82.0 | 80.4 | 82.5 | 81.5 | 82.7 | 82.0 | 81.6 | 84.4 | 85.6 | 85.2 | 86.2 | 85.8 | −0.4 |
| % saying often | NA | 1.8 | 2.4 | 2.0 | 1.7 | 1.7 | 1.7 | 2.4 | 2.2 | 2.0 | 1.8 | 2.1 | 1.7 | 1.7 | 1.7 | 1.6 | −0.1 |
| Amphetamines | | | | | | | | | | | | | | | | | |
| % saying not at all | NA | 59.6 | 60.3 | 60.9 | 58.1 | 59.2 | 50.5 | 49.8 | 53.9 | 55.0 | 59.0 | 63.5 | 68.3 | 72.1 | 72.6 | 71.7 | −0.9 |
| % saying often | NA | 6.8 | 7.9 | 6.7 | 7.4 | 8.3 | 12.1 | 12.3 | 10.1 | 9.0 | 6.5 | 5.8 | 4.5 | 4.1 | 4.7 | 4.1 | −0.6 |
| Barbiturates | | | | | | | | | | | | | | | | | |
| % saying not at all | NA | 69.0 | 70.0 | 73.5 | 73.6 | 74.8 | 74.1 | 74.3 | 77.5 | 78.8 | 81.1 | 84.2 | 86.9 | 87.6 | 88.2 | 86.7 | −1.5 |
| % saying often | NA | 4.5 | 5.0 | 3.4 | 3.3 | 3.4 | 4.0 | 4.3 | 3.0 | 2.7 | 1.7 | 2.1 | 1.5 | 1.4 | 1.7 | 1.7 | 0.0 |
| Tranquilizers | | | | | | | | | | | | | | | | | |
| % saying not at all | NA | 67.7 | 66.0 | 67.5 | 67.5 | 70.9 | 71.0 | 73.4 | 76.5 | 76.9 | 76.6 | 80.4 | 81.6 | 81.8 | 84.9 | 83.7 | −1.2 |
| % saying often | NA | 5.5 | 6.3 | 4.9 | 4.3 | 3.2 | 4.2 | 3.5 | 2.9 | 2.9 | 2.2 | 2.5 | 2.6 | 2.2 | 2.1 | 1.9 | −0.2 |
| Alcoholic beverages | | | | | | | | | | | | | | | | | |
| % saying not at all | NA | 6.0 | 5.6 | 5.5 | 5.2 | 5.3 | 6.0 | 6.0 | 6.0 | 6.0 | 6.0 | 5.9 | 6.1 | 6.9 | 7.7 | 6.4 | −1.3 |
| % saying often | NA | 57.1 | 60.8 | 60.8 | 61.2 | 60.2 | 61.0 | 59.3 | 60.2 | 58.7 | 59.5 | 58.0 | 58.7 | 56.4 | 55.5 | 56.1 | +0.6 |
| Approx. N = | (NA) | (2950) | (3075) | (3682) | (3253) | (3259) | (3608) | (3645) | (3334) | (3238) | (3252) | (3078) | (3296) | (3300) | (2795) | (2556) | |

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NOTES: Level of significance of difference between the two most recent classes: s = .05, ss = .01, sss = .001. NA indicates data not available.

[a] These estimates were derived from responses to the questions listed above. "Any illicit drug" includes all drugs listed except alcohol.

they were around people using amphetamines "to get high or for kicks" also jumped substantially between 1980 and 1982 (by 9% to 50%).[21] It then fell continually by a full 22% between 1982 and 1990 as self-reported use has been declining.

- Between 1978 and 1981 ***methaqualone*** use rose, as did the proportion of seniors saying some of their friends used it. A decline in both use and friends use started in 1982, and by 1990 there were 21% fewer seniors saying they had any friends who use quaaludes (down from 33% to 14% between 1981 and 1990).

- The proportion saying that "most or all" of their friends smoke ***cigarettes*** dropped steadily and substantially between 1976 and 1981, from 37% to 22%. (During this period actual use dropped markedly, and more seniors perceived their friends as disapproving regular smoking.) After 1981, friends' use (as well as self-reported use) remained relatively stable, and in 1990 is only 1% lower than in 1981. In 1977, the peak year for actual use, 34% said most or all of their friends smoked; in 1981, 22.4%, and in 1990, 21.4%.

- The proportion saying most or all of their friends ***get drunk*** at least once a week had been increasing steadily between 1976 and 1979, from 27% to 32%, in a period in which the prevalence of occasional heavy drinking was rising by about the same amount. After that, there was little change in either measure for about five years. Beginning in 1984 and 1985, self-reports by seniors of their own heavy drinking declined some before stabilizing at a lower level; but friends' heavy drinking did not show such a decline. Since 1987 there has been further decline in self-reported heavy drinking, this time accompanied by some drop in friends use. Without question, what remains the most impressive fact here is that more than a quarter of all high school seniors (28% in 1990) say that most or all of their friends get drunk at least once a week. And only about one in five (21%) say that none of their friends get drunk that often.

## IMPLICATIONS FOR VALIDITY OF SELF-REPORTED USAGE QUESTIONS

- We have noted a high degree of correspondence in the aggregate level data presented in this report among seniors' self-reports of their ***own*** drug use, their reports concerning ***friends'*** use, and their own ***exposure*** to use. Drug-to-drug comparisons in any given year across these three types of measures tend to be highly parallel, as are the changes from year to year.[22] We take this consistency as additional evidence for the validity of the self-report data, and of trends in the self-report data, since there should be less reason to distort answers on friends' use, or general exposure to use, than to distort the reporting of one's own use.

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[21] This finding was important, since it indicated that a substantial part of the increase observed in self-reported amphetamine use was due to things other than simply an increase in the use of over-the-counter diet pills or stay-awake pills, which presumably are not used to get high. Obviously, more young people were using stimulants for recreational purposes. There still remained the question, of course, of whether the active ingredients in those stimulants really were amphetamines.

## PERCEIVED AVAILABILITY OF DRUGS

One set of questions asks for estimates of how difficult it would be to obtain each of a number of different drugs if they wanted some. The answers range across five categories from "probably impossible" to "very easy." While no systematic effort has been undertaken to assess directly the validity of these measures, it must be said that they do have a rather high level of face validity—particularly if it is the subjective reality of "perceived availability" which is purported to be measured. It also seems quite reasonable to us to assume that perceived availability tracks actual availability to some extent.

### *Perceived Availability for Seniors in 1990*

- There are substantial differences in the reported availability of the various drugs. In general, the more widely used drugs are reported to be available by the highest proportion of the age group, as would be expected (see Table 25 and Figures 29a and b).

- ***Marijuana*** appears to be almost universally available to high school seniors; some 84% report that they think it would be "very easy" or "fairly easy" for them to get—44% more than the number who report ever having used it.

- After marijuana, the students indicate that the psychotherapeutic drugs are among the most available to them: ***amphetamines*** are seen as available by 60%, ***cocaine*** by 55%, ***barbiturates*** by 46% and ***tranquilizers*** by 45%.

- More than half of the seniors (55%) now see ***cocaine*** as readily available to them, and 42% of all seniors think ***crack*** is readily available.

- ***LSD***, ***other psychedelics***, and ***opiates other than heroin*** are reported as available by substantial minorities of seniors (41%, 28%, and 38%, respectively).

- ***Amyl and butyl nitrites*** are seen by the fewest seniors (24%) as being easy to get, perhaps reflecting the proliferation of state laws making over-the-counter sales of these drugs illegal.

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[22] Those minor instances of noncorrespondence may well result from the larger sampling errors in our estimates of these environmental variables, which are measured on a sample size one-fifth or one-sixth the size of the self-reported usage measures.

FIGURE 29a

**Trends in Perceived Availability of Drugs**
All Seniors

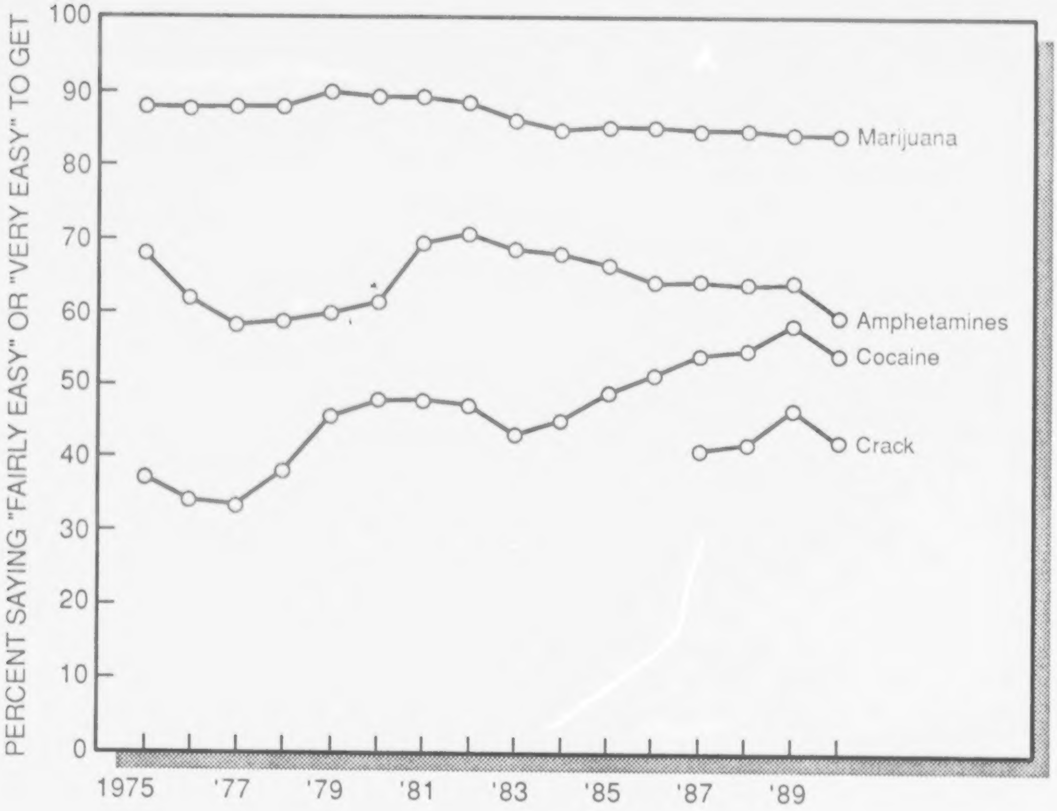
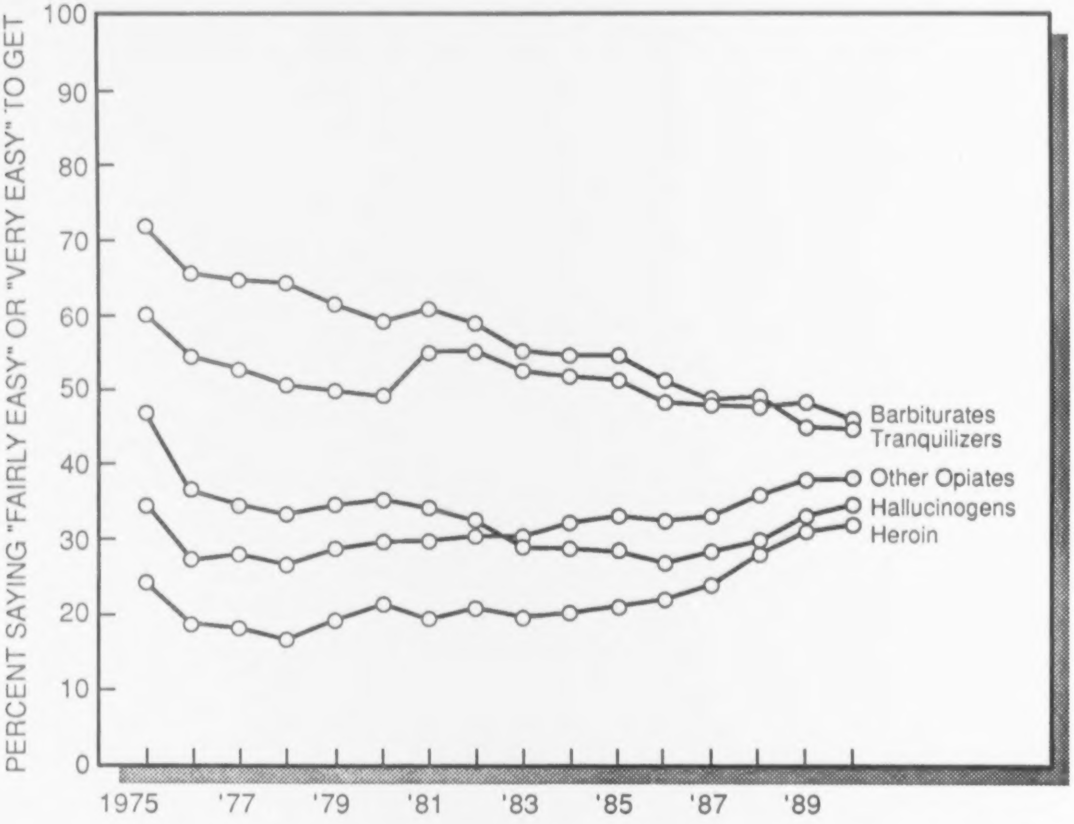


FIGURE 29b

**Trends in Perceived Availability of Drugs**
All Seniors



## TABLE 25

## Trends in Perceived Availability of Drugs, All Seniors

| *Q. How difficult do you think it would be for you to get each of the following types of drugs, if you wanted some?* | Percentage saying drug would be "Fairly easy" or "Very easy" for them to get[a] | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Class of 1975 | Class of 1976 | Class of 1977 | Class of 1978 | Class of 1979 | Class of 1980 | Class of 1981 | Class of 1982 | Class of 1983 | Class of 1984 | Class of 1985 | Class of 1986 | Class of 1987 | Class of 1988 | Class of 1989 | Class of 1990 | '89–'90 change |
| Marijuana | 87.8 | 87.4 | 87.9 | 87.8 | 90.1 | 89.0 | 89.2 | 88.5 | 86.2 | 84.6 | 85.5 | 85.2 | 84.8 | 85.0 | 84.3 | 84.4 | +0.1 |
| Amyl & Butyl Nitrites | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 23.9 | 25.9 | 26.8 | 24.4 | –2.4 |
| LSD | 46.2 | 37.4 | 34.5 | 32.2 | 34.2 | 35.3 | 35.0 | 34.2 | 30.9 | 30.6 | 30.5 | 28.5 | 31.4 | 33.3 | 38.3 | 40.7 | +2.4 |
| PCP | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 22.8 | 24.9 | 28.9 | 27.7 | –1.2 |
| Some other psychedelic | 47.8 | 35.7 | 33.8 | 33.8 | 34.6 | 35.0 | 32.7 | 30.6 | 26.6 | 26.6 | 26.1 | 24.9 | 25.0 | 26.2 | 28.2 | 28.3 | +0.1 |
| Cocaine | 37.0 | 34.0 | 33.0 | 37.8 | 45.5 | 47.9 | 47.5 | 47.4 | 43.1 | 45.0 | 48.9 | 51.5 | 54.2 | 55.0 | 58.7 | 54.5 | –4.2s |
| "Crack" | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 41.1 | 42.1 | 47.0 | 42.4 | –4.6ss |
| Cocaine powder | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | 52.9 | 50.3 | 53.7 | 49.0 | –4.7ss |
| Heroin | 24.2 | 18.4 | 17.9 | 16.4 | 18.9 | 21.2 | 19.2 | 20.8 | 19.3 | 19.9 | 21.0 | 22.0 | 23.7 | 28.0 | 31.4 | 31.9 | +0.5 |
| Some other narcotic (including methadone) | 34.5 | 26.9 | 27.8 | 26.1 | 28.7 | 29.4 | 29.6 | 30.4 | 30.0 | 32.1 | 33.1 | 32.2 | 33.0 | 35.8 | 38.3 | 38.1 | –0.2 |
| Amphetamines | 67.8 | 61.8 | 58.1 | 58.5 | 59.9 | 61.3 | 69.5 | 70.8 | 68.5 | 68.2 | 66.4 | 64.3 | 64.5 | 63.9 | 64.3 | 59.7 | –4.6ss |
| Barbiturates | 60.0 | 54.4 | 52.4 | 50.6 | 49.8 | 49.1 | 54.9 | 55.2 | 52.5 | 51.9 | 51.3 | 48.3 | 48.2 | 47.8 | 48.4 | 45.9 | –2.5 |
| Tranquilizers | 71.8 | 65.5 | 64.9 | 64.3 | 61.4 | 59.1 | 60.8 | 58.9 | 55.3 | 54.5 | 54.7 | 51.2 | 48.6 | 49.1 | 45.3 | 44.7 | –0.6 |
| Approx. N = | (2627) | (2865) | (3065) | (3598) | (3172) | (3240) | (3578) | (3602) | (3385) | (3269) | (3274) | (3077) | (3271) | (3231) | (2806) | (2549) | |

NOTE: Level of significance of difference between the two most recent classes: s = .05, ss = .01, sss = .001. NA indicates data not available.

[a] Answer alternatives were: (1) Probably impossible, (2) Very difficult, (3) Fairly difficult, (4) Fairly easy, and (5) Very easy.

- The great majority (usually two-thirds or more) of recent users of ***all drugs***—that is, of those who have illicitly used the drug in the past year—feel that it would be easy for them to get that same type of drug. (Data not displayed here.)

*Trends in Perceived Availability for Seniors*

- ***Marijuana***, for the first time since the study was begun in 1975, showed a small but statistically significant decline in perceived availability (down 3.9%) between 1982 and 1984, undoubtedly due to the reduced proportion of seniors who have friends who use. There has been little further change since then, and 84% of the class of 1990 think marijuana would be easy to get.

- ***Amphetamines*** showed a full 11% jump in availability between 1979 and 1982; but availability has dropped back by 11% in the eight years since.

- The perceived availability of ***barbiturates*** also jumped about 6% between 1980 and 1982, but dropped back by 9% in the subsequent eight years.

- Between 1977 and 1980 there was a substantial (15%) increase in the perceived availability of ***cocaine*** (see Figures 29a and b and Table 25). Among recent cocaine users there also was a substantial increase observed over that three-year interval (data not shown). Availability then leveled, and dropped some in 1983 and 1984, before rising significantly (by 4%) in 1985. Perceived availability rose another 2.6% in 1986. Since 1986 actual use of cocaine has dropped sharply, but reported availability continued to rise through 1989. The fact that there was no drop in perceived availability between 1986 and 1988 leads us to discount supply reduction as a possible explanation for the significant decline in use observed in those years. In 1990 there was a significant decrease in perceived availability—perhaps reflecting the impact of the reduced number of users.

- The use of ***tranquilizers*** has been declining fairly steadily since 1977, and perceived availability has declined over the same period, though by a smaller proportion.

- The perceived availability of ***LSD*** dropped sharply between 1975 and 1986 (from 46% to 29% saying it could be fairly easy to get). Since then availability has risen again (to 41%). The availability of ***other psychedelics*** also dropped sharply between 1975 and 1978, and since 1978 has shown a further decline of 6%. During the latter period the use of PCP dropped substantially, although availability appears to have risen in recent years.

- For a full decade (between 1976 and 1986) there was not much change in the perceived availability of ***heroin***, but since 1986 there has been a significant increase.

- ***Other opiates*** have shown a very slight, gradual upward shift in availability, from 27% in 1976 to 38% in 1990.

- All these trends in perceived availability are similar when we restrict the sample to recent users of each of the drugs (data not shown).

### *The Importance of Supply Reduction vs. Demand Reduction*

- Overall, it is important to note that ***supply reduction*** does not appear to have played a major role in perhaps the two most important downturns in use which have occurred to date—namely, those for ***marijuana*** and ***cocaine***. (See earlier Figures 23 and 24.) In the case of cocaine, perceived availability was actually rising during much of the period of downturn in use (a conclusion which is corroborated by data from the Drug Enforcement Administration on trends in the price and purity of cocaine on the streets). In the case of marijuana, availability has remained almost universal in this age group over the last ten years, while use has dropped substantially. Similarly, ***amphetamine*** use has declined appreciably since 1981 with only a modest corresponding change in perceived availability.

- What has changed dramatically are young peoples' beliefs about the dangers of using marijuana and cocaine; and, as we have been saying for some years, we believe these changes have led to a decrease in use directly through their impact on the young peoples' demand for these drugs, and indirectly through their impact on personal disapproval and subsequently on peer norms. Since perceived risks of amphetamine use have not changed a great deal since 1981, other factors must help to account for the decline in demand for that class of drugs—quite conceivably a displacement to cocaine. And because the three classes of drugs (marijuana, cocaine and amphetamines) have shown *different* patterns of change, it is highly unlikely that a general factor (e.g., a general shift against drug use) can explain the various trends. changed appreciably since 1981 other factors must account for the decline in demand for that class of drugs. And because the three classes of drugs (marijuana, cocaine and amphetamines) have shown *different* patterns of change, it is highly unlikely that a general factor (e.g., a general shift against drug use) can explain the various trends.

# OTHER FINDINGS

## Chapter 10

# OTHER FINDINGS FROM THE STUDY

Each year this section presents additional recent findings from the Monitoring the Future study. Some of these have been published recently as journal articles or chapters; however, the first two analyses included here—on the use of nonprescription stimulants and daily marijuana use—have not been reported elsewhere.

## THE USE OF NONPRESCRIPTION STIMULANTS

As is discussed in other chapters of this report, between 1979 and 1981 we observed a substantial increase in reported stimulant use by high school students. We had reason to believe that a fair part of that increase was attributable to nonprescription stimulants of two general types—"look-alike" drugs (pseudo-amphetamines, usually sold by mail order, which look like, and often have names that sound like, real amphetamines) and over-the-counter stimulants (primarily diet pills and stay-awake pills). These drugs usually contain caffeine, ephedrine, and/or phenylpropanolamine as their active ingredients.

Beginning with the 1982 survey we introduced new questions on some questionnaire forms in order to more accurately assess the use of amphetamines as well as to assess the use of the "look-alikes," diet pills, and stay-awake pills of the nonprescription variety. For example, on one of the five questionnaire forms in 1982–1988 and on one of six questionnaire forms beginning in 1989, respondents were asked to indicate on how many occasions (if any) they had taken nonprescription diet pills such as Dietac™, Dexatrim™, and Prolamine™ (a) in their lifetime, (b) in the prior twelve months, and (c) in the prior thirty days. (These correspond to the standard usage questions asked for all drugs.) Similar questions were asked about nonprescription stay-awake pills (such as No-Doz™, Vivarin™, Wake™, and Caffedrine™) and the "look-alike" stimulants. (The latter were described at some length in the actual question.)

On three of the five questionnaire forms in 1982 and 1983 (and in all questionnaire forms thereafter) respondents were also asked about their use of prescription amphetamines, with very explicit instructions to exclude the use of over-the-counter and "look-alike" drugs. These questions yielded the data described in this volume as "stimulants, adjusted." Here we will refer to them as "amphetamines, adjusted," to distinguish them more clearly from the nonamphetamine stimulants.

### *Prevalence of Use in 1990 Among Seniors*

- Tables 26a-c give the prevalence levels for these various classes of stimulants. As can be seen, a substantial proportion of students (18%) have used over-the-counter ***diet pills*** and 4% have used them in just the past month. Some 0.3% are using them daily.

## TABLE 26a

## Non-Prescription Diet Pills: Trends in Seniors' Lifetime, Annual, and Thirty-Day Prevalence, by Sex[a]

(Entries are percentages)

| | Class of 1982 | 1983 | 1984 | 1985 | 1986 | 1987 | 1988 | 1989 | 1990 | '89–'90 change |
|---|---|---|---|---|---|---|---|---|---|---|
| Prevalence | | | | | | | | | | |
| Lifetime | | | | | | | | | | |
| Total | 29.6 | 31.4 | 29.7 | 28.7 | 26.6 | 25.5 | 21.5 | 19.9 | 17.7 | −2.2 |
| Males | 16.5 | 17.4 | 14.8 | 14.8 | 13.1 | 12.4 | 9.4 | 9.1 | 7.8 | −1.3 |
| Females | 42.2 | 44.8 | 43.1 | 41.5 | 39.7 | 38.3 | 32.6 | 30.2 | 28.3 | −1.9 |
| Annual | | | | | | | | | | |
| Total | 20.5 | 20.5 | 18.8 | 16.9 | 15.3 | 13.9 | 12.2 | 10.9 | 10.4 | −0.5 |
| Males | 10.7 | 10.6 | 9.2 | 9.0 | 6.9 | 6.4 | 4.9 | 4.3 | 4.3 | 0.0 |
| Females | 29.5 | 30.0 | 27.5 | 24.4 | 23.2 | 21.1 | 18.8 | 17.2 | 16.7 | −0.5 |
| Thirty-Day | | | | | | | | | | |
| Total | 9.8 | 9.5 | 9.9 | 7.3 | 6.5 | 5.8 | 5.1 | 4.8 | 4.3 | −0.5 |
| Males | 5.0 | 4.0 | 4.8 | 3.7 | 3.2 | 2.7 | 1.8 | 2.3 | 1.9 | −0.4 |
| Females | 14.0 | 13.7 | 14.2 | 10.7 | 9.6 | 8.9 | 8.3 | 7.0 | 6.7 | −0.3 |

NOTE: Level of significance of difference between the two most recent classes: s = .05, ss = .01, sss = .001.

[a] Data based on one form N. Total N in 1982–1989 is approximately 3300. In 1990, the total N is approximately 2600.

## TABLE 26b

### Stay-Awake Pills: Trends in Seniors' Lifetime, Annual, and Thirty-Day Prevalence, by Sex[a]

(Entries are percentages)

| | Class of 1982 | 1983 | 1984 | 1985 | 1986 | 1987 | 1988 | 1989 | 1990 | '89–'90 change |
|---|---|---|---|---|---|---|---|---|---|---|
| Prevalence | | | | | | | | | | |
| Lifetime | | | | | | | | | | |
| Total | 19.1 | 20.4 | 22.7 | 26.3 | 31.5 | 37.4 | 37.4 | 36.3 | 37.0 | +0.7 |
| Males | 20.2 | 22.3 | 23.2 | 28.0 | 32.0 | 34.8 | 38.0 | 37.7 | 35.3 | −2.4 |
| Females | 16.9 | 18.2 | 21.7 | 24.9 | 31.3 | 39.4 | 36.7 | 35.1 | 39.2 | +4.1 |
| Annual | | | | | | | | | | |
| Total | 11.8 | 12.3 | 13.9 | 18.2 | 22.2 | 25.2 | 26.4 | 23.0 | 23.4 | +0.4 |
| Males | 12.8 | 13.8 | 15.4 | 19.7 | 22.3 | 25.5 | 27.6 | 24.8 | 22.3 | −2.5 |
| Females | 10.0 | 10.5 | 12.5 | 17.0 | 22.2 | 25.0 | 25.2 | 21.7 | 24.5 | +2.8 |
| Thirty-Day | | | | | | | | | | |
| Total | 5.5 | 5.3 | 5.8 | 7.2 | 9.6 | 9.2 | 9.8 | 8.5 | 7.3 | −1.2 |
| Males | 6.0 | 5.5 | 6.2 | 7.7 | 9.5 | 9.3 | 11.0 | 10.0 | 7.1 | −2.9s |
| Females | 4.7 | 4.5 | 5.5 | 6.7 | 9.3 | 9.1 | 8.6 | 6.9 | 7.3 | +0.4 |

NOTE: Level of significance of difference between the two most recent classes: s = .05, ss = .01, sss = .001.

[a] Data based on one form N. Total N in 1982-1989 is approximately 3300. In 1990, the total N is approximately 2600.

# TABLE 26c

## Look-Alikes: Trends in Seniors' Lifetime, Annual, and Thirty-Day Prevalence, by Sex[a]

(Entries are percentages)

| | Class of 1982 | 1983 | 1984 | 1985 | 1986 | 1987 | 1988 | 1989 | 1990 | '89–'90 change |
|---|---|---|---|---|---|---|---|---|---|---|
| Prevalence | | | | | | | | | | |
| Lifetime | | | | | | | | | | |
| Total | 15.1 | 14.8 | 15.3 | 14.2 | 12.7 | 11.9 | 11.7 | 10.5 | 10.7 | +0.2 |
| Males | 13.6 | 14.2 | 14.1 | 14.1 | 12.3 | 10.9 | 10.4 | 10.1 | 11.6 | +1.5 |
| Females | 15.1 | 14.4 | 15.2 | 13.8 | 12.6 | 12.3 | 12.1 | 10.2 | 9.9 | −0.3 |
| Annual | | | | | | | | | | |
| Total | 10.8 | 9.4 | 9.7 | 8.2 | 6.9 | 6.3 | 5.7 | 5.6 | 5.6 | 0.0 |
| Males | 9.5 | 9.2 | 9.7 | 8.3 | 6.5 | 6.4 | 4.2 | 6.1 | 6.6 | +0.5 |
| Females | 10.7 | 8.6 | 8.5 | 7.8 | 6.7 | 6.0 | 6.3 | 5.0 | 4.6 | −0.4 |
| Thirty-Day | | | | | | | | | | |
| Total | 5.6 | 5.2 | 4.4 | 3.6 | 3.4 | 2.7 | 2.7 | 2.4 | 2.3 | −0.1 |
| Males | 4.0 | 4.5 | 4.5 | 3.8 | 3.4 | 2.4 | 1.7 | 2.3 | 2.6 | +0.3 |
| Females | 5.2 | 5.4 | 3.8 | 3.1 | 3.0 | 2.7 | 3.0 | 2.2 | 1.8 | −0.4 |

NOTE: Level of significance of difference between the two most recent classes: s = .05, ss = .01, sss = .001.

[a] Data based on one form N. Total N in 1982-1989 is approximately 3300. In 1990, the total N is approximately 2600.

- Based on the data presented earlier in this report, we know that very similar proportions are using actual ***amphetamines*** (adjusted): 18% lifetime, 4% monthly, and 0.2% daily prevalence.

- Fewer students knowingly use the "***look-alikes***" than use diet pills or amphetamines (adjusted): 11% lifetime, 2% monthly, and 0.2% daily prevalence. Of course, it is probable that some proportion of those who think they are getting real amphetamines have actually been sold "look-alikes," which are far cheaper for drug dealers to purchase.

- This year, ***stay-awake pills*** are the most widely used stimulant: 37% lifetime, 7% monthly, and 0.4% daily prevalence.

- In 1983 the newly revised question on amphetamine use yielded prevalence estimates which were about one-quarter to one-third lower than the original version of the question, indicating that some distortion in the unadjusted estimates was occurring as a result of the inclusion of some nonprescription stimulant use.

### *Subgroup Differences*

- Figure 30 shows the prevalence figures for these drug classes for ***males and females*** separately. It can be seen that the use of ***diet pills*** is dramatically higher among females than among males. In fact, the absolute prevalence levels for females are impressively high, 28% report some experience with them and 7%—or one in every fourteen females—report use in just the last month. For all other stimulants the prevalence rates for both sexes are fairly close.

- A similar comparison for those planning four years of ***college*** (referred to here as the "college-bound") and those who are not shows some differences as well (data not shown). As is true for the controlled substances, use of the "***look-alikes***" is lower among the college-bound (4% annual prevalence vs. 8% among the noncollege-bound).

  This year's results show little difference between these two groups in their use of diet pills; annual prevalence is 10% among college-bound vs. 13% for the noncollege-bound. Use of ***stay-awake pills*** is slightly higher for the college-bound—annual prevalence is 24% vs. 23% for the noncollege-bound.

- There have not been any dramatic regional differences in the use of diet pills, the "look-alikes," or the stay-awake pills, but the 1990 data show higher rates for "look-alikes" and stay-awake pills in the North Central region.

- All three nonprescription stimulants have lowest prevalence in the large cities.

# TABLE 27

## Percent of Seniors in Each Category of an Illicit Drug Use Index Who Have Tried Various Over-the-Counter Stimulants, Class of 1990

| | Lifetime Illicit Drug Use | | |
|---|---|---|---|
| Lifetime use of... | No Use | Marijuana Only | Other Illicit Drugs |
| Diet Pills | 8.8[a] | 19.4 | 35.6 |
| Stay-Awake Pills | 22.2 | 48.2 | 61.2 |
| "Look-Alikes" | 1.8 | 9.2 | 30.8 |
| Approx. N= | (1287) | (471) | (645) |

---

[a] This means that, of those who have never used an illicit drug, 8.8% have used a diet pill at least once.

- The use of all of the nonprescription stimulants (i.e., ***diet pills***, ***stay-awake pills***, and "***look-alikes***") is substantially higher among those who have had experience with the use of illicit drugs than among those who have not, and highest among those who have become most involved with illicit drugs (see Table 27). For example, only 1.8% of those who have abstained from any illicit drug use report ever having used a "***look-alike***" stimulant, compared to 9.2% of those who report having used only marijuana and 31% of those who report having used some illicit drug other than marijuana.

*Trends in Use Among Seniors*

- Because these questions were new in 1982, trends can be assessed directly only since then.

- However, it is worth noting that the adjusted 1982 figures for ***amphetamines*** are higher than the unadjusted figures for all years prior to 1980. (See Tables 10 through 13.) This suggests that there was indeed an increase in amphetamine use between 1979 and 1982—or at least an increase in what, to the best of the respondent's knowledge, were amphetamines.

- In recent years, there have been increased legislative and law enforcement efforts to curb the manufacture and distribution of "***look-alike***" pills. Perhaps as a result, the use of these pills decreased from 1982 to 1990; for example, annual prevalence went from 10.8% in 1982 to 5.7% in 1988. Most of the decline occurred among those who have had experience with illicit drugs other than marijuana—the group primarily involved in the use of "look-alikes". Since 1988 use has remained level.

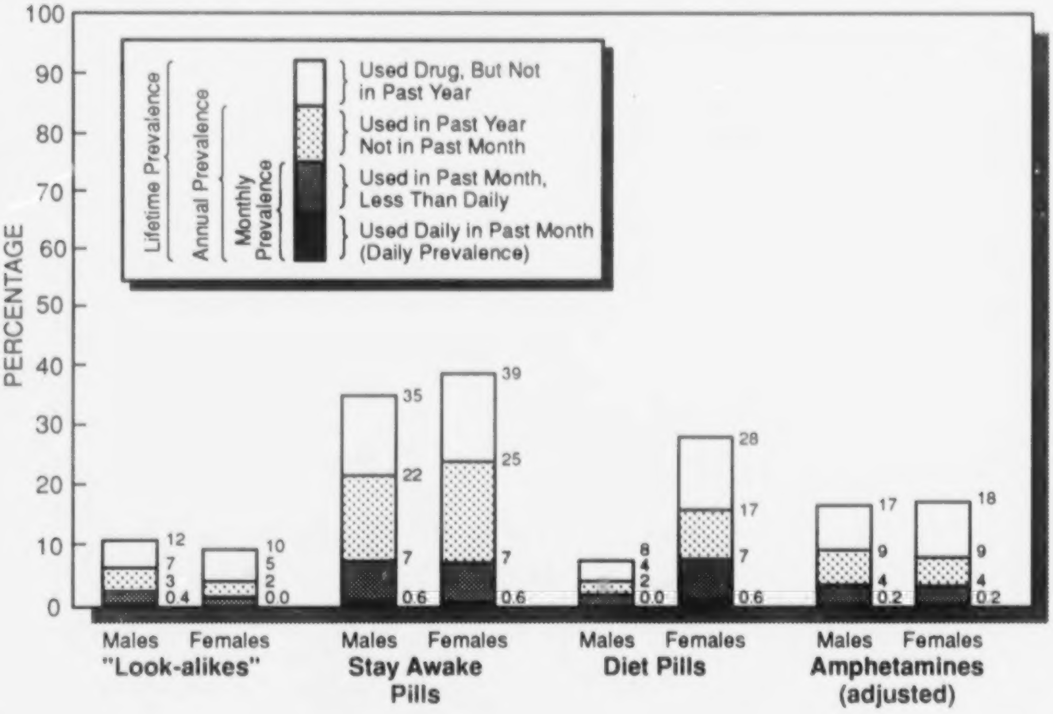
- Use of ***diet pills*** decreased between 1983 and 1990. Over that interval annual prevalence fell from 20.5% to 10.4%. Nearly all of this decline occurred among the group who had used illicit drugs other than marijuana.

- Only the use of ***stay-awake*** pills had increased significantly in recent years, particularly in 1985, 1986, and 1987; annual prevalence increased from 12% in 1982 to 25% in 1987. In 1988 it increased only slightly to 26%. A significant decrease occurred in 1989 with annual prevalence dropping to 23% where it remains in 1990. Both the increase and decrease occurred primarily among those who have had experience in the use of illicit drugs, including those who had used only marijuana (data not shown).

- All subgroups (defined by sex, college plans, region of the country, and population size) showed similarly large increases from 1982 to 1988 in their use of ***stay-awake pills***. All subgroups decreased in annual prevalence between 1988 and 1990 except for a slight increase of 0.1% in the North Central region.

FIGURE 30

**Prevalence and Recency of Use, by Sex**
**Amphetamines and Non-Prescription Stimulants**
Class of 1990



- Subgroup differences in trends for ***diet pills*** and ***look-alikes*** for the most part reflect the overall trends.

## THE USE OF MARIJUANA ON A DAILY BASIS

In past reports in this series, we summarized a number of findings regarding daily marijuana users, including what kind of people they are, how use changes after high school for different subgroups, and what daily users see to be the negative consequences of their use.[23] In 1982 a special question segment was introduced into the study in one of the five questionnaire forms in order to secure more detailed measurement of individual patterns of daily use. (This question was included in one of six forms since 1988.) More specifically, respondents were asked (a) whether at any time during their lives they had ever used marijuana on a daily or near-daily basis for at least a month and, if so, (b) how recently they had done that, (c) when they first had done it, and (d) how many total months they had smoked marijuana daily, cumulating over their whole lifetime. The results of our analyses of these questions follow.

### *Lifetime Prevalence of Daily Use*

- ***Current daily use***, defined as use on twenty or more occasions in the past thirty days, has been fluctuating widely since the study began, as we know from the trend data presented earlier in this report. It rose from 6.0% among seniors in 1975 to 10.7% in 1978, then declined to 2.2% in 1990.

- Since 1982, we have found the ***lifetime prevalence of daily use*** for a month or more to be far higher than current daily use—e.g., at 10.0% or one in every ten seniors in 1990, vs. 2.2% for current daily use. In other words, the proportion who describe themselves as having been daily or near-daily users at some time in their lives is more than four times as high as the number who describe themselves as current daily users. However, we believe it very likely that this ratio has changed dramatically over the life of the study as a result of the large secular trends in daily use. Therefore, it would be inaccurate to extrapolate to the class of 1978, for example, and deduce that their lifetime prevalence of daily use was four times their 10.7% current use figure that year. (An investigation of data from a follow-up panel of the class of 1978 confirms this assertion.)

- Utilizing data collected in 1989 from follow-up panels from the earlier graduating classes of 1976 through 1988, we found that the lifetime prevalence of daily marijuana use for these graduates (ranging in age from about 19 to 31) was 20%. Approximately one-fourth of the older portion of that group—graduates from the classes of 1976 through 1979—indicate having been daily marijuana users for a month or more at some time in their lives.

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[23] For the original reports see the following, which are available from the author: Johnston, L.D. (1981). Frequent marijuana use: Correlates, possible effects, and reasons for using and quitting. In R. DeSilva, R. Dupont, & G. Russell (Eds.), *Treating the marijuana dependent person*, New York: The American Council on Marijuana. Also see Johnston, L.D. (1982). A review and analysis of recent changes in marijuana use by American young people. In *Marijuana: The national impact on education*, New York: The American Council on Marijuana.

### *Grade of First Daily Use*

- Of those 1990 seniors who were daily users at some time (10.0% of the sample), two-thirds (67%, or 6.7% of all seniors) began that pattern of use before tenth grade. However, the secular trends in daily use must be recalled. Active daily use reached its peak among seniors in 1978, when this 1990 graduating class was in kindergarten. Thus we are confident that different graduating classes show different age-associated patterns of onset.

- Nearly all who were to become daily users by the end of high school had done so by the end of grade ten (86% of the eventual daily users). The percentages of all seniors who started daily marijuana use in each grade level is presented in Table 28.

### *Recency of Daily Use*

- More than two-thirds (69%) of those who report ever having been daily marijuana users (for at least a one-month interval) have smoked that frequently in the past year-and-a-half, while nearly one-third (31%) of them say they last used that frequently "about two years ago" or longer. On the other hand, only 25% of all such users (or 2.5% of the entire sample) classified themselves as having used daily or almost daily in the past month (the period for which we define ***current*** daily users). Our definition of current daily users yields 2.2% in 1990, though the two definitions do not always agree exactly.

### *Duration of Daily Use*

- It seems likely that the most serious long-term health consequences associated with marijuana use will be directly related to the duration of heavy use and in the late 1970's there was considerable concern that a large population of chronic heavy users would evolve. Thus a question was introduced which asks the ***cumulative*** number of months the student has smoked marijuana daily or nearly daily. While hardly an adequate measure of the many different possible cross-time patterns of use—a number of which may eventually prove to be important to distinguish—it does provide a gross measure of the total length of exposure to heavy use.

- Table 28 gives the distribution of answers to this question. It shows that two-thirds (63%) of those seniors with daily use experience have used "about one year" or less cumulatively—at least by the end of twelfth grade. In fact, nearly a third (30%)

## TABLE 28
## Daily Marijuana Use: Responses to Selected Questions by Subgroups: 1990 Seniors

| | Total | Sex | | 4-Year College Plans | | Region | | | | Population Density | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| *Q. Thinking back over your whole life, has there ever been a period when you used marijuana or hashish on a daily, or almost daily, basis for at least a month?* | | Male | Female | No | Yes | North East | North Central | South | West | Large SMSA | Other SMSA | Non-SMSA |
| No | 90.0 | 89.4 | 92.1 | 87.2 | 92.6 | 89.6 | 89.2 | 91.3 | 89.0 | 91.7 | 88.3 | 91.8 |
| Yes | 10.0 | 10.6 | 7.9 | 12.8 | 7.4 | 10.4 | 10.8 | 8.7 | 11.0 | 8.3 | 11.7 | 8.2 |
| *Q. How old were you when you first smoked marijuana or hashish that frequently?* | | | | | | | | | | | | |
| Grade 6 or earlier | 1.3 | 1.6 | 0.7 | 1.9 | 0.8 | 1.1 | 1.5 | 0.9 | 2.2 | 1.2 | 1.6 | 0.8 |
| Grade 7 or 8 | 3.1 | 3.3 | 2.1 | 4.7 | 1.8 | 3.1 | 2.9 | 3.1 | 3.3 | 1.8 | 4.1 | 2.2 |
| Grade 9 (Freshman) | 2.3 | 2.0 | 2.1 | 2.4 | 2.0 | 2.3 | 2.3 | 2.2 | 2.5 | 2.9 | 2.4 | 1.3 |
| Grade 10 (Sophomore) | 1.9 | 2.2 | 1.7 | 2.4 | 1.8 | 2.5 | 2.6 | 1.3 | 1.5 | 1.3 | 2.0 | 2.7 |
| Grade 11 (Junior) | 1.1 | 1.1 | 1.1 | 1.1 | 0.8 | 1.4 | 1.4 | 0.6 | 1.0 | 0.8 | 1.2 | 1.2 |
| Grade 12 (Senior) | 0.2 | 0.4 | 0.2 | 0.4 | 0.2 | 0.0 | 0.1 | 0.5 | 0.5 | 0.3 | 0.5 | 0.0 |
| Never used daily | 90.0 | 89.4 | 92.1 | 87.2 | 92.6 | 89.6 | 89.2 | 91.3 | 89.0 | 91.7 | 88.3 | 91.8 |
| *Q. How recently did you use marijuana or hashish on a daily, or almost daily, basis for at least a month?* | | | | | | | | | | | | |
| During the past month | 2.5 | 2.2 | 2.1 | 3.9 | 1.4 | 2.1 | 2.1 | 2.8 | 2.7 | 2.0 | 2.6 | 2.7 |
| 2 months ago | 0.5 | 0.5 | 0.1 | 0.5 | 0.3 | 0.4 | 0.5 | 0.5 | 0.9 | 0.5 | 0.6 | 0.3 |
| 3 to 9 months ago | 1.7 | 1.8 | 1.3 | 2.0 | 1.4 | 1.7 | 1.9 | 1.6 | 1.6 | 1.6 | 2.0 | 1.0 |
| About 1 year ago | 1.9 | 2.4 | 1.5 | 1.8 | 1.4 | 2.6 | 2.8 | 1.1 | 1.5 | 1.1 | 2.8 | 1.2 |
| About 2 years ago | 2.2 | 2.6 | 1.6 | 2.3 | 2.0 | 2.7 | 2.1 | 1.5 | 2.7 | 1.4 | 2.3 | 2.6 |
| 3 or more years ago | 1.2 | 1.2 | 1.3 | 2.2 | 0.9 | 0.9 | 1.4 | 1.2 | 1.5 | 1.6 | 1.4 | 0.5 |
| Never used daily | 90.0 | 89.4 | 92.1 | 87.2 | 92.6 | 89.6 | 89.2 | 91.3 | 89.0 | 91.7 | 88.3 | 91.8 |
| *Q. Over your whole lifetime, during how many months have you used marijuana or hashish on a daily or near-daily basis?* | | | | | | | | | | | | |
| Less than 3 months | 3.0 | 3.1 | 2.5 | 2.8 | 2.6 | 2.0 | 3.6 | 2.7 | 3.7 | 1.9 | 3.8 | 2.3 |
| 3 to 9 months | 2.1 | 2.4 | 1.6 | 3.2 | 1.4 | 2.3 | 2.3 | 1.2 | 3.2 | 1.9 | 2.3 | 1.9 |
| About 1 year | 1.2 | 1.3 | 1.1 | 0.7 | 1.0 | 1.8 | 1.3 | 0.7 | 1.0 | 0.9 | 1.0 | 1.7 |
| About 1 and 1/2 years | 0.6 | 0.7 | 0.5 | 1.0 | 0.4 | 0.6 | 0.6 | 0.6 | 1.1 | 0.9 | 0.6 | 0.4 |
| About 2 years | 1.1 | 1.2 | 0.7 | 1.7 | 0.7 | 1.6 | 1.1 | 1.2 | 0.5 | 1.0 | 1.5 | 0.4 |
| About 3 to 5 years | 1.6 | 1.6 | 1.3 | 2.7 | 1.2 | 1.7 | 1.7 | 1.7 | 1.1 | 1.3 | 2.0 | 1.0 |
| 6 or more years | 0.4 | 0.4 | 0.2 | 0.7 | 0.1 | 0.5 | 0.2 | 0.6 | 0.4 | 0.3 | 0.5 | 0.5 |
| Never used daily | 90.0 | 89.4 | 92.1 | 87.2 | 92.6 | 89.6 | 89.2 | 91.3 | 89.0 | 91.7 | 88.3 | 91.8 |
| N = | (2569) | (1230) | (1212) | (662) | (1639) | (546) | (709) | (862) | (452) | (636) | (1304) | (629) |

NOTE: Entries are percentages which sum vertically to 100%.

have used less than three months cumulatively. On the other hand, nearly one-third (31%, or 3.1% of *all* seniors) have used "about two years" or more cumulatively.

### *Subgroup Differences*

- There is some ***sex difference*** in the proportion having ever been a daily user—11% for males and 8% for females. Furthermore, the cumulative duration of daily use is distinctly longer for the males. These two sex differences combine to account for the large male-female difference in current daily use. There is also some difference in their age at onset, with the males tending to start earlier on the average.

- Whether or not the student has ***college plans*** is strongly related to lifetime prevalence of daily marijuana use, as well as to current prevalence. Of those planning four years of college, 7.4% had used daily compared with 12.8% of those without such plans. And the college-bound users show a distinctly shorter cumulative duration of use, with a lower proportion of them still using daily. Among those in each group who did use daily, the age-at-onset pattern is a little younger for the noncollege-bound.

- At present there are slight ***regional differences*** in lifetime prevalence of daily use; the West is highest, with 11.0% having used daily at some time, the North Central is next at 10.8%, followed by the Northeast at 10.4% and the South at 8.7%.

- The subgroup differences associated with ***urbanicity*** are similar to those found for current daily use. ***Lifetime*** prevalence of daily marijuana use is 8.3% in the large cities, 11.7% in the smaller cities, and 8.2% in the nonurban areas. Current daily use is 2.0% in the large cities, 2.4% in the smaller cities, and 2.0% in the nonurban areas.

### *Trends in Use of Marijuana on a Daily Basis*

- Table 29 presents trend data on the lifetime prevalence of daily use for a month or more. It shows a decelerating decline since 1982 (when this measure was first used) through 1990, from 21% to 10%.

- Between 1982 and 1990, the decline in lifetime daily use was stronger among females (from 18% to 8%) than among males (20% to 11%); and the absolute drop was larger in the noncollege-bound group (23% to 13%) than among the college-bound (14% to 7%) although the proportional drop was not.

- Lifetime prevalence of daily use has dropped in all four regions of the country since 1982. The decline has been greatest in the Northeast.

## TABLE 29

### Trends in Daily Use of Marijuana in Lifetime by Subgroups

| | Percentage ever using daily for at least a month | | | | | | | | | | Percentage reporting first such use prior to tenth grade | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Class of 1982 | Class of 1983 | Class of 1984 | Class of 1985 | Class of 1986 | Class of 1987 | Class of 1988 | Class of 1989 | Class of 1990 | '89–'90 change | Class of 1982 | Class of 1983 | Class of 1984 | Class of 1985 | Class of 1986 | Class of 1987 | Class of 1988 | Class of 1989 | Class of 1990 | '89–'90 change |
| All seniors | 20.5 | 16.8 | 16.3 | 15.6 | 14.9 | 14.7 | 12.8 | 11.5 | 10.0 | −1.5 | 13.1 | 11.1 | 10.9 | 8.8 | 8.5 | 8.9 | 7.8 | 7.6 | 6.7 | −0.9 |
| Sex: | | | | | | | | | | | | | | | | | | | | |
| Male | 20.1 | 18.1 | 17.2 | 17.7 | 16.6 | 16.2 | 14.8 | 12.7 | 10.6 | −2.1 | 12.9 | 12.1 | 11.8 | 9.8 | 8.7 | 10.2 | 8.4 | 8.4 | 6.9 | −1.5 |
| Female | 18.0 | 13.5 | 12.9 | 12.0 | 11.6 | 12.2 | 9.6 | 9.7 | 7.9 | −1.8 | 11.5 | 8.3 | 8.0 | 6.5 | 6.6 | 7.1 | 6.6 | 6.0 | 4.9 | −1.1 |
| College Plans: | | | | | | | | | | | | | | | | | | | | |
| None or under 4 yrs | 22.5 | 20.3 | 18.9 | 19.6 | 17.2 | 18.0 | 14.5 | 15.3 | 12.8 | −2.5 | 14.2 | 13.5 | 12.3 | 11.8 | 10.7 | 11.4 | 11.0 | 11.6 | 9.0 | −2.6 |
| Complete 4 yrs | 13.8 | 10.5 | 10.7 | 10.6 | 11.0 | 11.1 | 9.8 | 9.1 | 7.4 | −1.7 | 8.2 | 6.5 | 6.6 | 5.5 | 5.2 | 6.4 | 5.3 | 5.1 | 4.6 | −0.5 |
| Region: | | | | | | | | | | | | | | | | | | | | |
| Northeast | 25.1 | 20.4 | 24.1 | 20.9 | 21.5 | 17.0 | 13.1 | 14.6 | 10.4 | −4.2 | 17.3 | 11.9 | 17.2 | 12.9 | 10.3 | 10.3 | 9.0 | 10.7 | 6.5 | −4.2s |
| North Central | 21.1 | 15.9 | 12.8 | 16.3 | 11.3 | 12.7 | 10.3 | 13.4 | 10.8 | −2.6 | 13.3 | 12.4 | 8.4 | 9.1 | 7.3 | 7.7 | 6.0 | 7.6 | 6.7 | −0.9 |
| South | 15.7 | 12.7 | 14.0 | 8.9 | 11.3 | 11.9 | 10.9 | 8.1 | 8.7 | +0.6 | 9.3 | 8.3 | 8.5 | 5.0 | 6.4 | 7.4 | 6.3 | 5.4 | 6.2 | +0.8 |
| West | 20.8 | 21.4 | 17.6 | 18.5 | 18.3 | 19.7 | 19.0 | 12.3 | 11.0 | −1.3 | 12.6 | 13.9 | 12.1 | 8.9 | 11.2 | 11.7 | 11.9 | 8.1 | 8.0 | −0.1 |
| Population Density: | | | | | | | | | | | | | | | | | | | | |
| Large SMSA | 23.8 | 20.0 | 19.4 | 18.1 | 17.0 | 16.7 | 14.0 | 10.6 | 8.3 | −2.3 | 15.6 | 13.7 | 12.4 | 12.0 | 9.6 | 11.8 | 8.1 | 6.0 | 5.9 | −0.1 |
| Other SMSA | 20.3 | 18.2 | 16.6 | 16.0 | 14.9 | 15.0 | 14.9 | 12.4 | 11.7 | −0.7 | 12.5 | 12.0 | 11.5 | 8.3 | 8.4 | 8.8 | 9.6 | 8.1 | 8.1 | 0.0 |
| Non-SMSA | 17.9 | 12.6 | 13.2 | 12.8 | 13.2 | 12.2 | 7.6 | 10.4 | 8.2 | −2.2 | 11.7 | 8.2 | 8.5 | 6.6 | 7.6 | 6.4 | 4.3 | 7.6 | 4.3 | −3.3 |

NOTE: Level of significance of difference between the two most recent classes: s = .05, ss = .01, sss = .001.

- All three population density levels have shown declines in lifetime daily use.

- Daily use prior to tenth grade has declined from 13% in the class of 1982 to 7% in the class of 1990. (This corresponds to people who were ninth graders between 1979 to 1987). Subgroup trends may be examined in Table 29.

## RACIAL/ETHNIC DIFFERENCES IN DRUG USE

The impacts of drug use and abuse are felt especially strongly in Black, Hispanic, and Native American communities; however, the patterns of use by members of these subgroups, especially youth, are not well documented. The Monitoring the Future study includes an item asking respondents, "How do you describe yourself?" and listing six race/ethnic categories plus a residual "other" category. In a report recently published in the *American Journal of Public Health*,[24] we reported drug use findings for male and female high school seniors in each of these six categories. A brief summary of the findings, adapted from the journal article, is included here.

In order to have large enough numbers of cases even within the relatively small racial/ethnic subgroups, we combined the senior classes of 1976–79, 1980–84, and 1985–89.

Annual prevalence rates for thirteen types of drugs, classes of 1985–89 combined, are displayed in Table 30. Monthly and daily drug use data also appear in the journal article, and show differences which parallel the annual data, although some subgroup differences are more pronounced for the monthly and daily data.

As the table shows, Native Americans had the highest prevalence rates for cigarettes, alcohol, and most illicit drugs. White students had the next highest rates of use for most drugs. Asian Americans had the lowest prevalence rates and Black students had levels nearly as low, except for marijuana. Prevalence rates for the Hispanic groups were mostly in the intermediate ranges except for relatively high cocaine use among the males.

Of particular importance, the trends in use (usually declines in recent years) were quite similar across these different racial/ethnic subgroups. This means, among other things, that Black seniors have consistently had lower usage rates than White students. One interesting difference among the subgroups in their patterns of change is observable for cigarette smoking. While smoking rates among White students remained fairly stable through most of the 1980's, following a brief period of decline, smoking rates among Black students continued to decline leading to considerable Black-White difference in smoking rates in recent years.

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[24] Bachman, J.G., Wallace, J.M. Jr., O'Malley, P.M., Johnston, L.D., Kurth, C.L., & Neighbors, H.W. (1991). Racial/ethnic differences in smoking, drinking, and illicit drug use among American high school seniors, 1976–1989. *American Journal of Public Health, 81*, 372–377.

## TABLE 30
## Annual Prevalence of Thirteen Types of Drugs, 1985–1989 Data Combined
by Sex and Race

| | Percent who used in last twelve months | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | White Male | Black Male | MexAm Male | PR&LA Male | Asian Male | Nat Am Male | White Female | Black Female | MexAm Female | PR&LA Female | Asian Female | Nat Am Female |
| Minimum N = | (28056) | (3688) | (1518) | (680) | (982) | (537) | (29808) | (4499) | (1599) | (712) | (917) | (531) |
| Marijuana/Hashish | 40.2 | 29.8 | 37.3 | 30.6 | 19.6 | 42.0 | 36.0 | 18.4 | 26.0 | 21.3 | 17.1 | 44.0 |
| Inhalants[a] | 8.8 | 2.6 | 6.0 | 5.1 | 4.8 | 9.6 | 5.2 | 2.2 | 4.3 | 2.9 | 3.2 | 4.4 |
| Hallucinogens | 8.3 | 1.9 | 5.9 | 6.5 | 3.0 | 10.0 | 5.0 | 0.6 | 2.2 | 2.1 | 2.2 | 9.0 |
| LSD | 7.0 | 1.3 | 5.2 | 3.4 | 2.5 | 7.8 | 3.9 | 0.3 | 1.6 | 1.1 | 1.9 | 7.2 |
| Cocaine | 11.9 | 6.1 | 14.7 | 15.6 | 5.8 | 14.2 | 9.3 | 2.6 | 7.6 | 8.2 | 5.7 | 15.5 |
| Heroin | 0.7 | 0.7 | 0.9 | 1.2 | 0.4 | 1.5 | 0.3 | 0.4 | 0.4 | 0.4 | 0.2 | 1.0 |
| Other opiates[b] | 6.5 | 1.9 | 3.2 | 3.0 | 3.1 | 7.4 | 5.3 | 1.2 | 2.1 | 1.6 | 2.1 | 5.7 |
| Stimulants[b] | 13.6 | 4.6 | 11.3 | 8.0 | 5.6 | 17.0 | 14.7 | 3.1 | 10.1 | 5.9 | 7.0 | 19.4 |
| Sedatives[b] | 5.3 | 2.2 | 4.7 | 4.6 | 3.4 | 8.8 | 4.4 | 1.2 | 2.7 | 2.6 | 2.6 | 6.4 |
| Barbiturates[b] | 4.4 | 1.9 | 4.1 | 4.0 | 2.6 | 7.2 | 3.8 | 1.1 | 2.4 | 2.5 | 2.3 | 6.2 |
| Methaqualone[b] | 2.5 | 0.9 | 1.2 | 2.3 | 1.5 | 4.8 | 1.4 | 0.3 | 0.5 | 0.5 | 0.9 | 2.2 |
| Tranquilizers[b] | 5.8 | 1.7 | 2.6 | 3.1 | 3.2 | 6.9 | 5.9 | 1.4 | 2.1 | 4.1 | 1.8 | 8.7 |
| Alcohol | 88.3 | 72.5 | 82.4 | 80.6 | 69.3 | 82.0 | 88.6 | 63.9 | 73.6 | 77.2 | 67.5 | 81.3 |
| CONFIDENCE INTERVALS: | | | | | | | | | | | | |
| at about 50% prevalence | 1.7 | 2.8 | 3.7 | 5.6 | 4.8 | 6.3 | 1.7 | 2.8 | 3.7 | 5.6 | 4.8 | 6.3 |
| at about 20% (or 80%) prevalence | 1.3 | 2.2 | 3.0 | 4.5 | 3.8 | 5.0 | 1.3 | 2.2 | 3.0 | 4.5 | 3.8 | 5.0 |
| at about 10% (or 90%) prevalence | 1.0 | 1.7 | 2.3 | 3.3 | 2.9 | 3.8 | 1.0 | 1.7 | 2.3 | 3.3 | 2.9 | 3.8 |

[a] Data based on four questionnaire forms. N is four-fifths of N indicated.
[b] Only drug use which was not under a doctor's orders is included here.

NOTE: Confidence intervals vary greatly depending upon sample size, design effect and percentage size. Examples of .95 confidence intervals for percentages in this table are shown above.

The findings reported here are largely consistent with other surveys of youth. A primary contribution of the Monitoring the Future analyses has been to document these differences based on large, nationally representative samples of high school seniors. A further contribution has been to show that drug use trends have been parallel, for the most part, across racial/ethnic subgroups.

Multivariate analyses indicate that these subgroup differences in drug use by high school seniors are not primarily attributable to family composition (e.g., single parent families), parents' education, region, or general rural-urban distinctions. On the other hand, surveys of this sort are not designed to explore the substantial differences in drug use which may exist from one city to another or from one neighborhood to another.

We stress again that a report based on high school seniors does not include those who drop out before graduation. The report notes that dropout rates are quite high among Native Americans and among Hispanics, whereas Black dropout rates in general have declined so that now they are not much higher than the rates for Whites. We thus conclude that the often large differences in drug use rates between Black and White seniors cannot be attributed simply to differential dropout rates.

## EXPLAINING RECENT DECLINES IN MARIJUANA USE AND COCAINE USE

Earlier reports in this series have noted the decline in marijuana use, beginning in about 1980, and the later decline in cocaine use, beginning in 1987. We also reported that these declines in use were accompanied by—indeed, sometimes preceded by—increased perceptions of risk and increased levels of disapproval. We argued that the timing and patterns of these several trends strongly suggested that changes in attitudes about specific drugs contributed heavily to the changes over time in levels of use.

This was not the only plausible interpretation of the findings, however. With respect to the decline in marijuana use, it was suggested that perhaps the declines in use gave rise to the changes in beliefs about harmfulness, rather than the other way around. Still another interpretation was that both the changes in perceptions and the changes in use reflected a more fundamental trend in recent years for young people to be more "conservative" or "conventional."

An article published several years ago examined these issues in considerable detail, using Monitoring the Future data from the senior classes of 1976–1986.[25] We found that although individual differences in lifestyle are important in understanding why some individuals are more likely than others to use marijuana, there was no evidence of any sort of overall conservative shift which could account for the recent decline in marijuana use. Specifically, we examined a number of the key correlates of marijuana use, looking separately at each class from 1976 through 1986, and found that the patterns of correlation were largely unchanged throughout the decade. More importantly, we found that these correlates of marijuana did not show any pattern of secular trends that were in a "conservative" direction—indeed, some trended in what would be the opposite direction. In other words, there was no evidence to support the view that the decline in marijuana use reflected a general increase in conservative views among high school seniors.

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[25] Bachman, J.G., Johnston, L.D., O'Malley, P.M., & Humphrey, R.H. (1988). Explaining the recent decline in marijuana use: Differentiating the effects of perceived risks, disapproval, and general lifestyle factors. *Journal of Health and Social Behavior, 29,* 92–112.

We did find, however, that the changes in attitudes about marijuana were large enough to account for the changes in use. Figure 23 in the present volume shows that perceptions of risk related to marijuana use rose sharply after 1979, and that use declined during the same period. (Figure 26a shows that disapproval also rose sharply after 1979.) Note in Figure 23 that perceived availability changed scarcely at all, and remained very high throughout the period when marijuana use declined substantially.

Additional analyses presented in the article showed that, since about 1980, for respondents at any given level of perceived risk, the actual usage level remained fairly constant. What changed during the 1980's was the number of people in each category, as increasing proportions concluded that there was a great risk involved in use. We thus concluded that "if there had not been a distinct increase in negative attitudes about marijuana, we would not have found steadily lower levels of marijuana use in each class of high school seniors since 1979." (p. 107)

Soon after these analyses of the decline in marijuana use were carried out, there were substantial shifts in attitudes toward cocaine along with sharp decreases in cocaine use. We extended the analytic strategy employed in the paper on declines in marijuana use, now focusing on cocaine use from 1976 through 1988.[26] Although levels of cocaine use, attitudes about cocaine, and the trend patterns across time were all different from those for marijuana, as illustrated in Figures 24 and 26b, the linkages between the attitudes and behaviors indicated that the same basic dynamics were involved in both sets of changes. Here again there were no important changes in lifestyle factors such as religious commitment or academic success which could account for the decline in cocaine use after 1986. Instead, the analyses strongly suggested that increases in perceived risks and disapproval contributed substantially to the declines in actual use of cocaine.

Based on both sets of analyses, we reached the following conclusions: "It appears that large proportions of young people do pay attention to new information about drugs, especially risks and consequences; such information, presented in a realistic and credible fashion, plays a vital part in reducing the demand for a drug. The evidence available thus far shows clearly that such reduction in demand has been the key to controlling the epidemics of marijuana use and cocaine use." (p. 182)[27]

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[26] Bachman, J.G., Johnston, L.D., & O'Malley, P.M. (1990). Explaining the recent decline in cocaine use among young adults: Further evidence that perceived risks and disapproval lead to reduced drug use. *Journal of Health and Social Behavior, 31*(2), 173–184.

[27] In addition to the two journal articles, two occasional papers are available which present these analyses in much greater detail: Bachman, J.G., Johnston, L.D., O'Malley, P.M. & Humphrey, R.H. (1986). *Changes in marijuana use linked to changes in perceived risks and disapproval.* (Monitoring the Future Occasional Paper No. 19). Ann Arbor, MI: Institute for Social Research. And also, Bachman, J.G., Johnston, L.D., & O'Malley, P.M. (1990). *Linking trends in cocaine use to perceived risks, disapproval, and lifestyle factors: An analysis of high school seniors, 1976–1988.* (Monitoring the Future Occasional Paper No. 29). Ann Arbor, MI: Institute for Social Research.

## CHANGES IN DRUG USE DURING PREGNANCY

One of the purposes of the follow-up portion of the Monitoring the Future project is to learn how the new roles and responsibilities of young adulthood affect drug use. Analyses of these follow-up data, reported in a recently published chapter,[28] provide further evidence that young people are indeed responsive to information about risks involved in drug use. In this case, the risks involve the unborn children carried by respondents who reported, at the time of follow-up, that they were pregnant.

The findings were summarized briefly as follows: "Pregnant women are very likely to stop or reduce their use of various drugs, and their rates of 'quitting' far exceed those of any other subgroup we have examined. This holds true for the illicit drugs marijuana and cocaine, and shows up even more dramatically for alcohol and cigarettes." (p. 149)

The findings appeared as part of large-scale multivariate analyses which controlled a variety of background factors including high school academic experiences and lifestyle, along with current factors such as marital and parental status, living arrangements, current employment, and recent unemployment experiences. The findings for pregnancy were not greatly affected by controls for these other factors, however, particularly once marital status was controlled. In other words, the "pregnancy effect" seems quite robust, and not attributable to other prior differences (including differences in high school levels of drug use).

One fairly simple approach to examining effects of pregnancy is to focus on those who did report a particular drug use behavior during the senior year of high school, and then look at the proportion who did *not* report such behavior at the time of the follow-up (i.e., those who had "quit"—recognizing, of course, that in some cases quitting may have taken place several years before the follow-up measurement). Table 31 shows such "quitting rates" linked to pregnancy; the data are based on follow-up surveys from 1984 (the first year we asked about pregnancy) through 1988 (the last year available before the chapter went to press).

The results show that pregnant women are about twice as likely as other women to have quit smoking at either the half-pack or more level, or at the level of any daily use; for example, 52% of all pregnant women in the 1984–1988 follow-up surveys who had been daily smokers as seniors in high school had quit daily smoking, compared to 25% of the non-pregnant women. Even more striking are the quit rates for alcohol use. Practically none of the pregnant women reported instances of heavy drinking (five or more drinks in a row during the past two weeks), and most reported no use of alcohol at all during the past month.

Among the minority of women who had reported current (30-day) marijuana use when they were seniors, more than half (55%) of those who were *not* pregnant had quit at time of follow-up, whereas more than four out of five (83%) had quit among those who *were*

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[28] Bachman, J.G., Johnston, L.D., & O'Malley, P.M. (1991). How changes in drug use are linked to perceived risks and disapproval: Evidence from national studies that youth and young adults respond to information about the consequences of drug use. *In* R.L. Donohew, H. Sypher, & W. Bukoski (Eds.), *Persuasive Communication and Drug Abuse Prevention*. Hillsdale, NJ: Lawrence Erlbaum. pp. 133–156.

## TABLE 31
## "Quitting Rates" Linked to Pregnancy
(Females Age 19–26, Surveyed in 1984–1988)

(Entries are percentages)

| | 5+ Drinks in a Row in Past 2 Weeks | 30-Day Alcohol | Daily Cigarette Use | 1/2 Pack or More per Day | 30-Day Marijuana | 30-Day Cocaine |
|---|---|---|---|---|---|---|
| All Females | | | | | | |
| Pregnant | 95.0 | 67.3 | 52.3 | 49.5 | 83.2 | 91.9 |
| Not Pregnant | 49.2 | 13.9 | 24.6 | 25.1 | 55.4 | 67.6 |
| Married Females | | | | | | |
| Pregnant | 97.6 | 68.7 | 58.8 | 55.5 | 86.2 | 93.5 |
| Not Pregnant | 69.1 | 21.8 | 28.9 | 27.7 | 63.8 | 79.0 |
| Parent, not Pregnant | 74.6 | 28.5 | 29.0 | 27.3 | 65.9 | 84.1 |

For present purposes, a "quitting rate" is defined as the answer to the following question: among only those who did report a particular behavior when they were high school seniors, what proportion did not report the behavior at the time of the follow-up?

pregnant. For the even smaller minority of women who had been current users of cocaine during their senior year, quit rates were even higher, with greater quitting again shown by those who were pregnant.

As we reported at the end of the chapter, "There are many ways of presenting the relationships between pregnancy and drug use, in addition to the 'quit' or 'continuation' rates shown here. but no matter which way we look at it, the findings clearly show that being pregnant has a distinct impact on drug use, above and beyond the effects of marital status, living arrangements, employment, and a variety of other factors. It is obvious that large proportions of young women today reduce or eliminate their use of psychoactive drugs during pregnancy, and presumably they do so primarily out of concern for the health of their unborn children." (pp. 152–153)

## TOWARD A THEORY OF DRUG EPIDEMICS

Our increasing belief in the importance of perceived risk, and in the importance of demand-side factors more generally, led to the evolution of a general theory of drug epidemics, which was first presented in a conference paper in 1989 and recently published in chapter form.[29] In that chapter, a theory is offered which attempts to account for both an *overall* epidemic, and for changes in uses of the specific component drugs. Forces contributing to three general phases of an epidemic—expansion, maintenance, and decline—are elaborated. A set of necessary conditions for expansion is postulated: awareness of the drug and its alleged psychoactive effects, access, motivation to use, reassurance about the safety of the drug, and a willingness to violate certain laws and predominant social mores. Four public social roles are also postulated which help to bring about these conditions for various drugs—Proponents, Reassurers, Public Role Models, and Antagonists.

A number of forces are put forward to explain how the forward momentum of an epidemic continues, even beyond the point where some of the historical forces which gave rise to it (e.g., the Vietnam War) have ceased to exist. These include continued awareness of alternatives, continued access through a supply system which has become established and which seeks to perpetuate itself, and continual inter-cohort role modeling for younger adolescents by slightly older ones (including siblings).

It is argued that the decline phase for many drugs occurs as a result of users, and potential users, becoming increasingly aware of the hazards of use. This interpretation can be construed as a specific application of the Health Belief Model, which has been used to explain health-motivated behavior in a number of other domains. Three public social roles are posited as being important to bringing about an increase in perceived risk: the Knowledge Providers (who develop new information about risks), Educators (who disseminate it), and Unfortunate Public Role Models (who are visibly damaged by their own drug use, e.g., Len Bias). It is argued that as perceived risks increase (a) use declines, and (b) social tolerance for use decreases, which has an additional impact on use. The role of vicarious learning from other peoples' experiences in both personal and public domains is also emphasized.

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[29] Johnston, L.D. (1991). Toward a theory of drug epidemics. *In* R.L. Donohew, H. Sypher, & W. Bukoski (Eds.), *Persuasive Communication and Drug Abuse Prevention.* Hillsdale, NJ: Lawrence Erlbaum. pp. 93–132.

It is pointed out that an increase in perceived risks cannot account for the decline in all drugs, and also may not be enough to cause a decline in all sub-populations. (In particular, a decline in motivation to achieve the effects obtained with CNS depressants is hypothesized as accounting for declines in tranquilizers, barbiturates, methaqualone, and possibly heroin.) Nevertheless, an increased concern about the dangers of use appears to have been a critical factor in the general decline of several very important drugs; in particular, marijuana, cocaine, crack cocaine specifically, LSD, and PCP.

## OTHER DATA ON CORRELATES AND TRENDS

Hundreds of correlates of drug use, without accompanying interpretation, may be found in the series of annual volumes from the study entitled *Monitoring the Future: Questionnaire Responses from the Nation's High School Seniors.*[30] For each year since 1975, a separate hardbound volume presents univariate and selected bivariate distributions on all questions contained in the study. A host of variables dealing explicitly with drugs—many of them not covered here—are contained in that series. Bivariate tables are provided for ***all*** questions each year distributed against an index of lifetime illicit drug involvement, making it possible to examine the relationship between hundreds of potential "risk factors" and drug use.

A special cross-time reference index is contained in each volume to facilitate locating the same question across different years. One can thus derive ***trend*** data on some 1500 to 2000 variables for the entire sample or for important subgroups (based on sex, race, region, college plans, and drug involvement).

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[30] This series is available from the Publications Division, Institute for Social Research, The University of Michigan, Ann Arbor, Michigan 48109.

# APPENDIX

# PREVALENCE AND TREND ESTIMATES ADJUSTED FOR ABSENTEES AND DROPOUTS

One question which has arisen over the years in regard to this study has concerned the degree to which the prevalence and trend estimates derived from high school seniors are an accurate reflection of the reality which pertains for all young people who would be in the same class or age cohort, including those who have dropped out of school by senior year. In 1985 we published an extensive chapter on this topic in a volume in the NIDA Research Monograph series.[31] We will attempt in this Appendix to summarize the main points relevant to this issue of sample coverage.

First, it should be noted that two segments of the entire class/age cohort are missing from the data collected each year from seniors: those who are still enrolled in school but who are absent the day of data collection (the "absentees") and those who have formally left school (the dropouts). The "absentees" constitute virtually all of the nonrespondents shown in the response rate given in Table 1 in Chapter 3 of this volume (since refusal rates are negligible) or about 18% of all seniors (or 15% of the class/age cohort). Based on our review of available Census data the dropouts account for approximately 15% of the class/age cohort.

The methods we used to estimate the prevalence rates for these two missing segments are summarized briefly here. Then, the effects of adding in these two segments to the calculation of the overall prevalence rates for two drug classes are presented along with the impact on the trend estimates. Two illicit drugs have been chosen for illustrative purposes: marijuana, the most prevalent of the illicit drugs, and cocaine, one of the more dangerous and less prevalent drugs. Estimates for high school seniors are presented for both lifetime and 30-day prevalence for each drug.

## THE EFFECTS OF MISSING ABSENTEES

To be able to assess the effects on the estimates of drug use of missing the absentees, we included a question in the study which asks students how many days of school they had missed in the previous four weeks. Using this variable, we can place individuals into different strata as a function of how often they tend to be absent. For example, all students who had been absent 50% of the time could form one stratum. Assuming that absence on the day of the administration is a fairly random event, we can use the respondents in this stratum to represent all students in their stratum, including the ones who happen to be absent that particular day. By giving them a double weight, they can be used to represent both themselves ***and*** the other 50% of their stratum who were absent that day. Those who say they were in school only one-third of the time would get a weight of three to represent themselves plus the two-thirds in their stratum who were not there, and so forth. Using this method, we found that absentees as a group have appreciably higher than average usage levels for all licit and illicit drugs. However, looking at 1983 data, we found that their omission did not depress any of the prevalence estimates in any of the drugs by more than 2.7%, due to the fact that they represent such a small proportion of the total target sample. Considering that a substantial proportion of those who are absent likely are absent for reasons unrelated to drug use—such as illness and participation in extracurricular activities—it may be surprising to see even these differences. In any case, from the point of view of instructing policy or public perceptions, the small "corrections" would appear to be of little or no significance. (The correction across all 13 drugs in lifetime prevalence averaged only 1.4%.) Further, such corrections should have virtually no effect on cross-time trend estimates unless the rate of absenteeism was changing appreciably; and we find no evidence in our data that it is. Put another way, the presence of a fairly slight underestimate which is constant across time should not influence trend results. Should absentee rates start changing, then it could be argued more convincingly that such corrections should be presented routinely.

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[31] Johnston, L.D., & O'Malley, P.M. (1985). Issues of validity and population coverage in student surveys of drug use. In B.A. Rouse, N.J. Kozel, & L.G. Richards (Eds.), *Self-report methods of estimating drug use: Meeting current challenges to validity* (NIDA Research Monograph No. 57; (ADM) 85-1402). Washington, DC: U.S. Government Printing Office.

## THE EFFECTS OF MISSING DROPOUTS

Unfortunately, we cannot derive corrections from data gathered from seniors to impute directly the prevalence rates for dropouts, as we did for absentees, since we have no completely appropriate stratum from which we have "sampled." We do know from our own previous research, as well as the work of others, that dropouts have prevalence rates for all classes of drugs substantially higher than the in-school students. In fact, the dropouts may be fairly similar to the absentees.

We have consistently estimated the proportion who fail to complete high school to be approximately 15%; Figure A-1 displays the completion rate for the years 1972 through 1989 based on Census data. As the figure indicates, completion rates (and the complement, dropout rates) have been quite constant over this interval for persons 20–24 years old.[32] (Younger age brackets are more difficult to use because they include some who are still enrolled in high school.) Monitoring the Future probably covers some small proportion of the 15%, in fact, since the survey of seniors takes place a few months before graduation, and not everyone will graduate. On the other hand, perhaps 1% to 2% of the age group which Census shows as having a diploma get it through a General Equivalency Degree and thus would not be covered in Monitoring the Future. (Elliot and Voss report this result for less than 2% of their sample in their follow-up study of 2617 ninth graders in California who were followed through their high school years.)[33] So these two factors probably cancel each other out. Thus, we use 15% as our estimate of the proportion of a class cohort not covered.

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[32] U.S. Bureau of the Census (various years). *Current population reports, Series P-20*, various numbers. Washington, DC: U.S. Government Printing Office.

[33] Elliott, D., & Voss, H.L. (1974). *Delinquency and dropout*. Lexington, MA: D.C. Heath-Lexington Books.

***Extrapolating to dropouts from absentees.*** To estimate the drug usage prevalence rates for this group we have used two quite different approaches. The first was based on extrapolations from seniors participating in this study. Using this method we developed estimates under three different assumptions: that the difference between dropouts and the participating seniors in the study was equivalent to (a) the difference between absentees and the participating seniors, (b) one and one-half times that difference, and (c) twice that difference. The last assumption we would consider a rather extreme one.

The second general method involved using the best recent national data on drug use among dropouts—namely the National Household Surveys on Drug Abuse.[34] While these surveys have rather small samples of dropouts in the relevant age range in any given year, they should at least provide unbiased estimates for dropouts still in the household population.

Using the first method of estimation, we found that, under the assumption that dropouts are just like absentees, no prevalence rate was changed by more than 5% over the estimate based on 1983 seniors only, even with the simultaneous correction for ***both*** absentees and dropouts. (The method for calculating prevalence rates for the absentees is the one described in the previous section.) The largest correction in 1983 involved marijuana, with lifetime prevalence rising from just under 60% to 64%. Even under the most extreme assumption—which results in exceptionally high prevalence rates for dropouts on all drugs, for example 90% lifetime prevalence for marijuana, the overall correction in any of the prevalence figures for any drug remains less than 7.5%. Again, marijuana shows the biggest correction (7.5% in annual prevalence, raising it from 46% uncorrected to 54% with corrections for both absentees and dropouts). As we would have expected, the biggest *proportional* change occurs for heroin, since it represents the most deviant end of the drug-using spectrum and thus would be most associated with truancy and dropping out.

***Extrapolating from the household surveys.*** The second method of estimating drug use among dropouts was by comparing the household survey data on dropouts with the data from those remaining in school. We conducted secondary analyses of the archived data from the 1977 and 1979 National Household Surveys. Analyses were restricted to the age range 17 to 19 years old, since about 95% of the Monitoring the Future respondents fall in this range. Of course, the numbers of cases are small. In the 1977 survey there were only 46 dropouts and 175 enrolled seniors in this age group. In the 1979 survey 92 dropouts and 266 seniors were included.

For marijuana, the estimated differences from the household survey data came out at a level which was at or below the *least* extreme assumption made in the previous method (where dropouts are assumed to have the same drug use levels as absentees). While this may have been comforting to the authors of the present report, we must admit that we believe the household sample underrepresents the more drug-prone dropouts to some degree. Those without permanent residence and those in the prison population, to take two examples, would be excluded from the sample coverage in a household survey. Thus we concluded that estimates closer to those made under the second assumption in the

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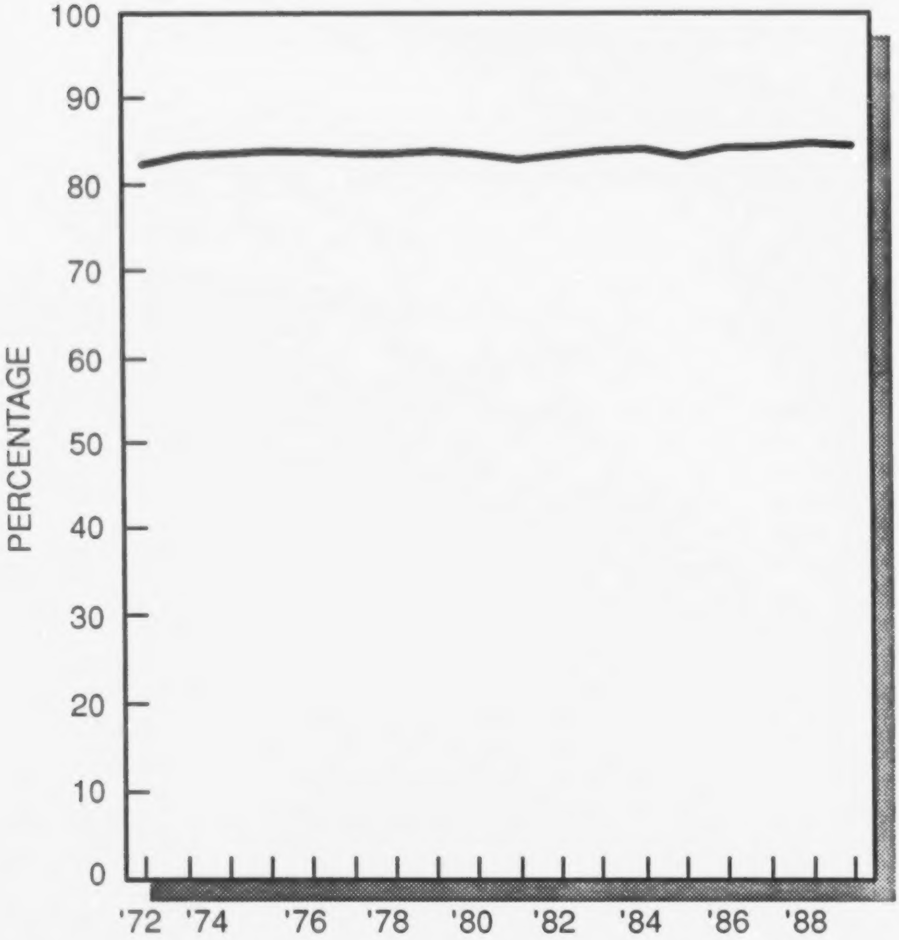
[34] Fishburne, P.M., Abelson, H.I., & Cisin, I. (1980). *National survey on drug abuse: Main findings, 1979* (NIDA (ADM) 80-976). Washington, DC: U.S. Government Printing Office. Also see Miller, J.D., et al., (1983). *National survey on drug abuse: Main findings, 1982* (NIDA (ADM) 83-1263). Washington, DC: U.S. Government Printing Office.

FIGURE A-1

**High School Completion by Persons 20-24 Years Old, 1972-1989**
U.S. Population



Source: U.S. Bureau of the Census, Current Populations Surveys, published and unpublished data; and 1980 Census.

previous method may be closer to reality—that is, that dropouts are likely to deviate from participating seniors by one and one-half times the amount that absentees deviate from them.

Again, we emphasize that there are a number of reasons for dropping out, many of which bear no relationship to drug use, including economic hardship in the family and certain learning disabilities and health problems. At the national level, the extreme groups such as those in jail or without a permanent place of residence are undoubtedly very small as a proportion of the total age group and probably even as a proportion of all dropouts. Thus, regardless of their prevalence rates, they would be unable to move the prevalence estimates by a very large proportion except in the case of the most rare events—in particular, heroin use. We do believe that in the case of heroin use—particularly regular use—we are very likely unable to get a very accurate estimate even with the corrections used in this paper. The same may be true for crack cocaine and PCP. For the remaining drugs, we conclude that our estimates based on participating seniors, though somewhat low, are not bad approximations for the age group as a whole.

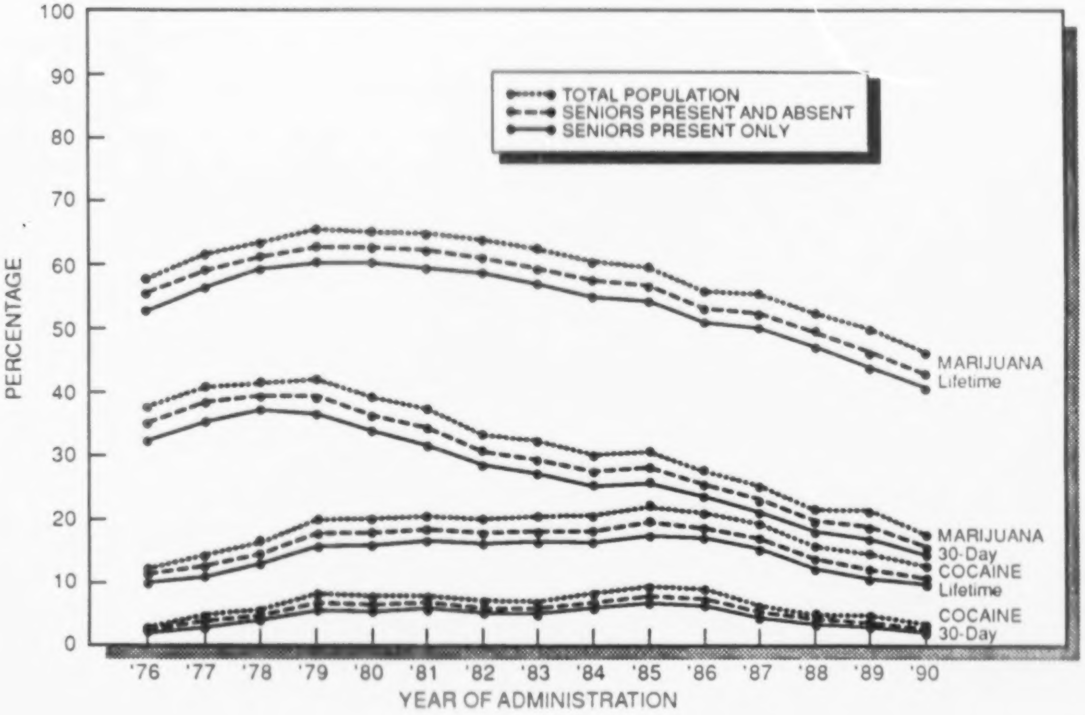
***Effects of omitting dropouts in trend estimates***. Whether the omission of dropouts affects the estimates of *trends* in prevalence rates is a separate question, however, from the degree to which it affects absolute estimates at a given point in time. The relevant issues parallel those discussed earlier regarding the possible effects on trends of omitting the absentees. Most important is the question of whether the rate of dropping out has been changing in the country, since a substantial change would mean that seniors studied in different years would represent noncomparable segments of the whole class/age cohort. Fortunately for the purposes of this study, at least, the official government data provided in Figure A-1 indicate a very stable rate of dropping out since 1972.

Given that there appears to be no sound evidence of a change in the dropout rate, the only reason that trend data from seniors would deviate from trends for the entire class cohort (including dropouts) would be if the constant proportion who have been dropping out showed trends contrary to those observed among seniors; and even then, because of their small numbers, they would have to show dramatically different trends to be able to change the trend "story" very much for the age group as a whole. There has been no hypothesis offered for such a differential shift among dropouts which these authors, at least, find very convincing.

The one hypothesis which is occasionally heard is that more youngsters are being expelled from school, or voluntarily leaving school, because of their drug use; and that this explains the recent downturn in the use of many drugs being reported by the study. However, it is hard to reconcile this hypothesis with the virtually flat dropout rates over the period displayed in Figure A-1, unless one posits a perfectly offsetting tendency for more completion among those who are less drug prone—hardly a very parsimonious set of explanations. Further, the reported prevalence of some drugs has remained remarkably stable throughout the life of the study (e.g., alcohol and opiates other than heroin) and the prevalence of some has risen (cocaine until 1987, and amphetamines until 1981). These facts are not very consistent with the hypothesis that there has been a recent increased rate of departure by the most drug prone. Certainly more youngsters leaving school in the 80's have drug problems than was true in the 60's. (So do more of those who stay in.) However, they still seem likely to be very much the same segment of the population, given the degree of association that exists between drug use and deviance and problem behaviors of various sorts.

FIGURE A-2

### Estimates of Prevalence and Trends for the Entire Age/Class Cohort, Adjusting for Absentees and Dropouts



## SUMMARY AND CONCLUSIONS

In sum, while we believe there is some underestimation of the prevalence of drug use in the cohort at large as a result of the dropouts being omitted from the universe of the study, we think the degree of underestimation is rather limited for all drugs (with the possible exceptions of heroin, crack and PCP) and, more importantly, that trend estimates have been rather little affected. Short of having good trend data gathered directly from dropouts—an expensive and technically difficult research undertaking—we cannot close the case definitively. Nevertheless, we think the available evidence argues strongly against alternative hypotheses—a conclusion which was also reached by the members of the NIDA technical review on this subject held in 1982.[35]

> . . . the analyses provided in this report show that failure to include these two groups (absentees and dropouts) does not substantially affect the estimates of the incidence and prevalence of drug use.

## EXAMPLES OF REVISED ESTIMATES FOR TWO DRUGS

Figure A-2 provides the prevalence and trend estimates of marijuana and cocaine, for both the lifetime and thirty-day prevalence periods, showing (a) the original estimates based on participating seniors only; (b) the empirically derived, revised estimates based on all seniors, including the absentees; and (c) estimates for the entire class/age cohort. The last estimate was developed using the assumption judged to be most reasonable above—namely that the dropouts differ from participating seniors by one and one-half times the amount that the absentees do. Estimates were calculated separately for each year, thus taking into account any differences from year to year in the participation or absentee rates. The dropout rate was taken as a constant 15% of the age group across all years.

As Figure A-2 illustrates, any difference in the slopes of the trend lines between the original and revised estimates is extremely, almost infinitesimally, small. The prevalence estimates are higher, of course, but not dramatically so, and certainly not enough so to have any serious policy-implication effects in the interpretation of the data.

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[35] Clayton, R.R., & Voss, H.L. (1982). *Technical review on drug abuse and dropouts.* Rockville, MD: National Institute on Drug Abuse.

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